# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**Washington, D.C. 20549**

## Form 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the fiscal year ended December 31, 2017**

**or**

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the transition period from to**

**Commission file number: 000-30171**

# SANGAMO THERAPEUTICS, INC.

**(Exact name of registrant as specified in its charter)**

| **Delaware**<br>**(State or other jurisdiction of incorporation or organization)** | **68-0359556**<br>**(I.R.S. Employer Identification No.)** |
|---|---|
| **501 Canal Boulevard, Richmond, California**<br>**(Address of principal executive offices)** | **94804**<br>**(Zip Code)** |

**(510) 970-6000**
**(Registrant's telephone number, including area code)**

**None**

**Securities registered pursuant to Section 12(b) of the Act:**

| **Title of Each Class** | **Name of Each Exchange on Which Registered** |
|---|---|
| **Common Stock, $0.01 par value per share** | **Nasdaq Global Select Market** |

**Securities registered pursuant to Section 12(g) of the Act: None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

| | | | |
|---|---|---|---|
| Large accelerated filer | ☒ | Accelerated filer | ☐ |
| Non-accelerated filer | ☐ (Do not check if a smaller reporting company) | Smaller reporting company | ☐ |
| | | Emerging growth company | ☐ |

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting stock held by non-affiliates of the registrant based upon the closing sale price of the common stock on June 30, 2017 (the last business day of the registrant's most recently completed second fiscal quarter), as reported on the Nasdaq Global Select Market was $734,155,954. For purposes of this calculation, directors and executive officers of the registrant have been deemed affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 15, 2018, a total of 86,338,976 shares of common stock $0.01 par value per share were outstanding.

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**DOCUMENTS INCORPORATED BY REFERENCE**

Certain information required by Part III, Items 10-14 of this Form 10-K is incorporated by reference to the registrant's definitive Proxy Statement for the 2018 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Form 10-K, provided that if such Proxy Statement is not filed within such period, such information will be included in an amendment to this Form 10-K to be filed within such 120-day period.

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## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some statements contained in this report are forward-looking with respect to our business. Forward-looking statements include, but are not limited to, statements about:

- our strategy;
- product development and commercialization of our products;
- clinical trials and release of data;
- partnering, acquisition and other strategic transactions;
- revenues from existing and new collaborations;
- our research and development and other expenses;
- manufacturing and supply;
- sufficiency of our cash resources;
- our operational and legal risks; and
- our plans, objectives, expectations and intentions and any other statements that are not historical facts.

In some cases, you can identify forward-looking statements by terms such as: “anticipates,” “believes,” “continues,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “seeks,” “should” and “will.” These forward-looking statements reflect our current views with respect to future events and are based on assumptions and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the headings “Risk Factors” and “Management’s Discussion and Analysis of Financial Results of Operations” in this Form 10-K. Accordingly, the forward-looking statements, which speak only as of the date of this Form 10-K. Except as required by law, we undertake no obligation to update or publicly release any revisions to forward-looking statements to reflect events or circumstances arising after the date of this report.

## PART I

### ITEM 1 – BUSINESS

### OVERVIEW

We are a clinical stage biotechnology company focused on translating ground-breaking science into genomic therapies that transform patients' lives using our industry-leading platform technologies in genome editing, gene therapy, gene regulation and cell therapy.

We are a leader in the research and development of zinc finger proteins, or ZFPs, a naturally occurring class of proteins found in humans. We have used our knowledge and expertise to develop a proprietary technology platform in both genome editing and gene regulation. ZFPs can be engineered to make zinc finger nucleases, or ZFNs, proteins that can be used to specifically modify DNA sequences by adding or knocking out specific genes, or genome editing, and ZFP transcription factors or ZFP TFs, proteins that can be used to increase or decrease gene expression, or gene regulation. In the process of developing this platform, we have accrued significant scientific, manufacturing and regulatory capabilities and know-how that are generally applicable in the broader field of gene therapy and have capitalized this knowledge into a conventional gene therapy platform based on adeno-associated viral vector, or AAV, cDNA gene transfer.

Our strategy is to maximize the value and therapeutic use of our technology platforms. In certain therapeutic areas we intend to capture the value of our proprietary genome editing and gene therapy products by forward integrating into manufacturing, development and commercial operations. In other therapeutic areas we intend to partner with biopharmaceutical companies to develop products.

We are focused on the development of human therapeutics for diverse diseases with well-characterized genetic causes. We have several proprietary clinical and preclinical product candidates in development and have strategically partnered certain programs with biopharmaceutical companies to obtain funding for our own programs and to expedite clinical and commercial development.

We have an ongoing Phase 1/2 clinical trial evaluating SB-525, a gene therapy for the treatment of hemophilia A, a bleeding disorder. We have ongoing Phase 1/2 clinical trials evaluating three product candidates using our proprietary *in vivo* genome editing approach: SB-FIX, for the treatment of hemophilia B, a bleeding disorder, SB-318, for the treatment of Mucopolysaccharidosis Type I, or MPS I, and SB-913 for the treatment of Mucopolysaccharidosis Type II, or MPS II. MPS I and MPS II are rare lysosomal storage disorders, or LSDs. We are also initiating a Phase 1/2 clinical trial evaluating ST-400, developed using our proprietary ZFN-mediated *ex vivo* cell therapy platform, for the treatment of beta-thalassemia, a blood disorder. In addition, we have proprietary preclinical and discovery stage programs in other LSDs and monogenic diseases, including certain central nervous system disorders, cancer immunotherapy, immunology and infectious disease.

In addition, we have proprietary preclinical programs in other monogenic diseases and LSDs. Our preclinical discovery efforts include research into potential therapeutic applications of our technology for certain central nervous system disorders, autoimmune disorders, infectious disease, and others.

In February 2018, we entered into a global collaboration and license agreement with Kite Pharma, Inc., or Kite, a wholly-owned subsidiary of Gilead Sciences, Inc., or Gilead, for the research, development and commercialization of potential engineered cell therapies for cancer. In this collaboration, we will work together with Kite on a research program under which we will design ZFNs and AAVs to disrupt and insert certain genes in T cells and natural killer, or NK, cells, including the insertion of genes that encode chimeric antigen receptors, or CARs, T-cell receptors, or TCRs and NK-cell receptors, or NKRs, directed to mutually agreed targets. Kite will be responsible for all clinical development and commercialization of any resulting products.

In December 2017, we entered into a new research collaboration and license agreement with Pfizer Inc., or Pfizer, for the development and commercialization of potential gene therapy products that use ZFP TFs to treat amyotrophic lateral sclerosis, or ALS, and frontotemporal lobar degeneration, or FTLD, linked to mutations of the *C9ORF72* gene. Under this agreement, we are working with Pfizer on a research program to identify, characterize and preclinically develop ZFP TFs that satisfy pre-agreed criteria. Pfizer is responsible for subsequent development, manufacturing and commercialization of licensed products.

In May 2017, we entered into a global collaboration and license agreement with Pfizer for the research, development and commercialization of SB-525, our gene therapy product candidate for hemophilia A, and closely related products. Under this agreement, we are responsible for conducting the Phase 1/2 clinical trial and certain manufacturing activities for SB-525, while Pfizer is responsible for subsequent worldwide development, manufacturing, marketing and commercialization of SB-525. We and Pfizer may also collaborate in the research and development of additional AAV-based gene therapy products for hemophilia A.

We have also established a collaborative partnership with Bioverativ, Inc., or Bioverativ, to research, develop and commercialize therapeutic gene-edited cell therapy products in hemoglobinopathies, including beta-thalassemia and sickle cell disease, or SCD. We expect to begin enrolling patients in a Phase 1/2 clinical study in the first half of 2018. Bioverativ is responsible for subsequent development, manufacturing and commercialization of licensed products.

We have a substantial intellectual property position in the genome editing field including the design, selection, composition and use of engineered ZFPs to support our research and development activities. As of February 15, 2018, we either owned outright or have exclusively licensed the commercial rights to over 860 patents issued in the United States and foreign jurisdictions, and over 610 patent applications pending worldwide. We continue to license and file new patent applications that strengthen our core and accessory patent portfolio. We believe that our intellectual property position is a critical element in our ability to research, develop and commercialize products and services based on genome editing, gene therapy, gene regulation and cell therapy.

In January 2017, we changed our corporate name to "Sangamo Therapeutics, Inc." to underscore our focus on clinical development of genomic therapies using our industry-leading platform technologies across genome editing, gene therapy, gene regulation and cell therapy.

## INTRODUCTION TO GENOME EDITING, GENE THERAPY, CELL THERAPY AND GENE REGULATION

### DNA, Genes, and Proteins

Deoxyribonucleic acid, or DNA, is present in all cells except mature red blood cells, and encodes the inherited characteristics of all living organisms. A cell's DNA is organized in chromosomes as thousands of individual units called genes. Genes encode proteins, which are assembled through the process of transcription—whereby DNA is transcribed into ribonucleic acid, or RNA,—and, subsequently, translation—whereby RNA is translated into protein (Figure 1). Proteins are involved in virtually all cell functions. DNA, RNA and proteins comprise many of the targets for pharmaceutical drug discovery and therapeutic intervention.

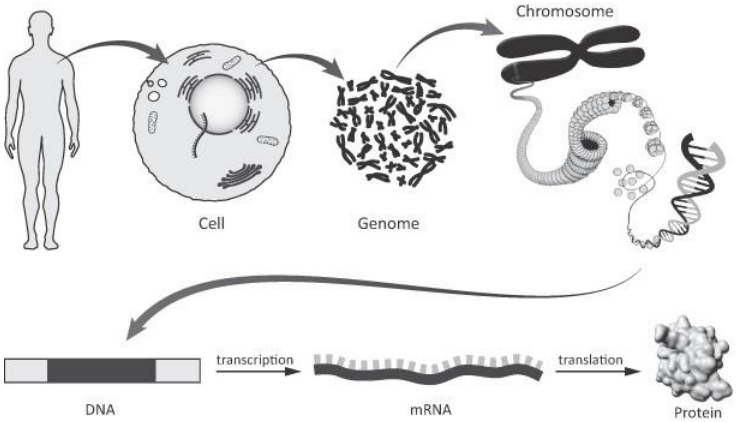



**Figure 1:**

**Schematic of the relationship between the human genome, DNA, RNA and protein**

The human body is composed of specialized cells that perform different functions and are thus organized into tissues and organs. All somatic cells in an individual's body contain the same set of genes. However, only a fraction of these genes are turned on, or expressed, in an individual human cell at any given time. Genes are regulated (*i.e.* turned on or turned off) by DNA-binding proteins called transcription factors in response to a wide variety of stimuli and developmental signals. Distinct sets of genes are

expressed in different cell types. It is this pattern of gene expression that determines the structure, biological function and health of all cells, tissues and organisms. The aberrant expression of certain genes can lead to disease. Similarly, a mistake, or mutation in the DNA sequence of a gene, can result in corresponding error in the protein encoded by the gene, which may have serious consequences for the cell and its function. A number of disorders have been identified as caused by the inheritance of a single defective gene. These so-called monogenic diseases include hemophilia A and hemophilia B, LSDs such as MPS I and MPS II, beta-thalassemia, SCD, Huntington's disease and many others.

**ZFPs are Naturally Occurring Transcription Factors in Humans**

A transcription factor recognizes and binds to a specific DNA sequence within or near a particular gene and causes expression of that gene to be "turned on" (activated) or "turned off" (repressed). ZFPs are the most common class of naturally occurring transcription factors in organisms from yeast to humans. In higher organisms, naturally occurring transcription factors typically comprise two domains: the first is a DNA-binding domain, (designated in Figure 2 as the "Recognition Domain"), which recognizes a target DNA sequence and thereby directs the transcription factor to the proper chromosomal location; the second is a functional domain that causes the target gene to be activated or repressed. To these naturally occurring transcription factors, we have added functional domains which enable genome editing at the site determined by the ZFP DNA-binding domain.

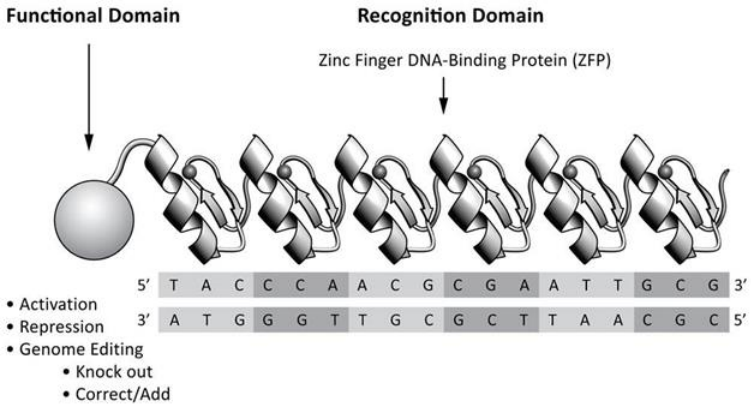



**Figure 2:**

**Schematic of the two-domain structure of a ZFP and its therapeutic functional domain**

**ZFNs can be designed for genome editing and ZFP TFs can be designed for gene regulation**

Consistent with the modular structure of natural ZFPs, we take a modular approach to the design of the proteins that we engineer. The ZFP portion of our engineered proteins, the DNA-recognition domain, is typically composed of four to six zinc fingers. Each individual finger recognizes and binds to a three or four base pair sequence of DNA and multiple fingers can be linked together to recognize longer stretches of DNA, thereby improving specificity. By modifying the amino acid sequence of a ZFP, we can engineer novel ZFPs capable of recognizing the DNA sequences of a chosen genomic target. We use the engineered ZFP DNA-binding domain to link to a functional domain. The ZFP DNA-binding domain brings the functional domain to the target of interest. Our ability to use our highly specific ZFP technology to precisely target a DNA sequence in a gene of interest provides us with a range of genome editing and gene regulation functions that can be applied in many different cell types.

Our engineered ZFPs can be attached to a cleavage domain of a restriction endonuclease, an enzyme that cuts DNA, creating a ZFN. When a pair of ZFNs is bound to the DNA in the correct orientation and spacing, the DNA sequence is cut between the ZFP binding sites. DNA binding by both ZFNs is necessary for cleavage, and both nuclease of the restriction endonuclease must be present in the correct orientation to interact with each other, in order to mediate DNA cleavage. This break in the DNA triggers a natural process of DNA repair in the cell. The repair process can be harnessed to achieve one of several outcomes that may be therapeutically useful (Figure 3). If cells are simply treated with ZFNs alone, the repair process joins the two ends of the broken DNA together and

frequently results in the loss or addition of a small amount of genetic material at the site of the break. This disrupts the original DNA sequence and can result in the expression of a truncated or non-functional protein from the targeted gene, effectively "knocking out" the gene function. ZFN-mediated genome editing can be used to disrupt genes that are involved in disease pathology. We are using ZFN-mediated genome editing of the *BCL11A* erythroid enhancer in hematopoietic stem progenitor cells, or HSPCs, which is designed to be a single long-lasting treatment for beta-thalassemia (ST-400) and SCD (BIVV-003).

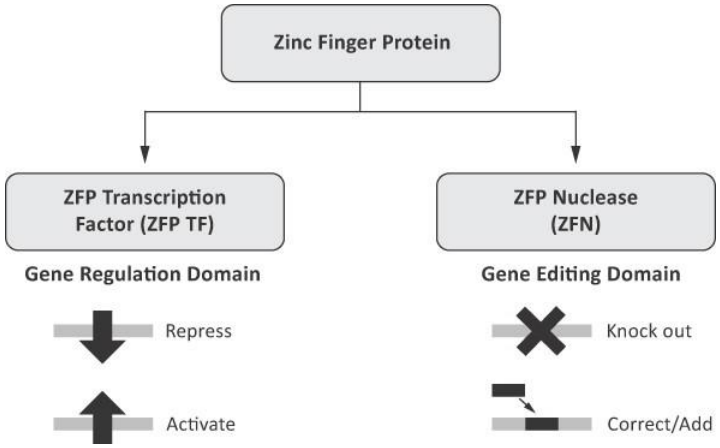



**Figure 3:**

**Schematic of ZFP genome editing and gene regulation**

In contrast, if cells with a mutation in a particular gene are treated not only with ZFNs, but also with a DNA sequence that encodes the correct gene sequence (referred to as a "donor" DNA) and with ZFNs that recognize and bind to sequences flanking the mutation, the cell's repair machinery can use the donor as a template to correct the mutated gene. This ZFN-mediated gene correction enables the corrected gene to be expressed in its natural chromosomal context and may provide a novel approach for the precise repair of DNA sequence mutations responsible for certain monogenic diseases. In addition to providing a donor sequence that encodes a complete gene, a new copy of a gene can also be precisely added into the genome at a specific location. The ability to precisely place a gene-sized segment of DNA specifically into a pre-determined location in the genome broadens the range of mutations of a gene that can be corrected in a single step. It also reduces the insertional mutagenesis concerns associated with traditional integrating gene replacement approaches such as lentiviruses, in which the insertion of a new corrective copy of the gene typically occurs at random locations in the genome. Our In Vivo Protein Replacement Platform™, or IVPRP™, in which our ZFN technology is used to insert a gene encoding a therapeutic protein into a location such as the *Albumin* gene, is an approach that we are investigating for the treatment of hemophilia B (SB-FIX) and LSDs (SB-318 and SB-913), which may potentially provide a single and potentially curative treatment for these diseases.

We are also evaluating ZFP TFs with the potential to control or regulate the expression of a target gene in the desired manner (Figure 3). For instance, attaching an activation domain to a ZFP will cause a target gene to be expressed at enhanced levels, relative to expression in an untreated cell. Alternatively, a repression domain causes the gene to be downregulated or completely turned off. Pursuant to a collaboration agreement with Shire International GmbH, or Shire, we have a preclinical program for Huntington's disease in which we are evaluating a ZFP TF designed to differentially down regulate the mutated disease-causing *Huntingtin*, or *HTT*, gene, while leaving expression of the normal gene unchanged.

**ZFPs can be designed to accomplish a range of functions in genome editing and gene regulation.**

To date, we and our partners have designed, engineered and assembled thousands of ZFPs and have tested many of these proteins for their affinity, or tightness of binding to their DNA target, as well as their specificity, or preference for their intended DNA target. We have developed methods for the design, selection and assembly of ZFPs capable of binding to a wide spectrum of DNA

sequences and genes. We have linked ZFPs to endonuclease domains to create highly specific ZFNs and to numerous functional domains to create gene-specific ZFP TFs. We have demonstrated the ability of these proteins to enable genome editing or gene regulation, of hundreds of genes in dozens of different cell types and in whole organisms, including non-human primates, or NHPs, mice, rats, rabbits, pigs, fruit flies, worms, zebrafish and yeast, and in plant species including canola and maize. We and our collaborators have published data from many of these studies in peer-reviewed scientific journals. ZFNs are currently being used to generate transgenic animals and cell lines that have specific genetic modifications that make them useful models of human disease. These high value biologic tools are being used by academic, and biotechnology and pharmaceutical companies for medical research and drug development. Our preclinical data have been reviewed by advisory bodies such as the National Institute of Health, or NIH, Recombinant Advisory Committee, or RAC, and regulatory bodies such as the U.S. Food and Drug Administration, or FDA, and we have ongoing clinical trials to evaluate the safety and efficacy of ZFNs in humans.

We have employed several strategies for the application of our ZFNs depending on the disease or indication. We routinely deliver our therapeutics as nucleic acids, either as messenger RNA, or mRNA, or encoded in a viral vector such as AAV that the cell then uses to make the protein form of the ZFN or ZFP TF. We can deliver ZFNs *ex vivo* (outside the body) to isolated cells of the blood, such as T cells, in the case of our clinical HIV, cancer immunotherapy and immunology programs, and HSPCs for our programs in HIV and monogenic blood diseases such as beta-thalassemia and SCD. We are also developing ZFPs in which we deliver our therapeutic proteins *in vivo*, either systemically (directly into the blood stream) as in our *in vivo* genome editing programs in hemophilia and LSD, or directly into a specific tissue such as the brain as in our Huntington's disease program.

**ZFPs provide the Opportunity to Develop a New Class of Human Therapeutics**

We believe that our ZFP technology provides a unique and proprietary basis for a broad new class of drugs that have differential technical advantages over small-molecule drugs, protein pharmaceuticals, RNA-based therapeutics, conventional gene therapy approaches and other genome editing platforms, enabling us to develop therapies for a broad range of unmet medical needs.

We can generate highly specific ZFNs for genome editing and ZFP TFs for gene regulation and have developed multiple delivery strategies to administer these therapeutics, including using mRNA, AAV, adenovirus, plasmid, and lipid nanoparticles. As more genes and DNA sequences are linked to specific diseases, we believe that the clinical breadth and scope of our ZFP applications will continue to expand.

For example, ZFPs can:

- **Enable genome editing and gene regulation strategies to address novel drug targets.** Engineered ZFNs enable the efficient disruption, correction or targeted addition of a gene sequence in a very precise fashion, and ZFP TFs enable either repression or activation of a therapeutically relevant gene in a cell. This gives our technology a degree of flexibility. Direct, targeted modification of the genome cannot be achieved using conventional gene therapy approaches, antisense RNA, siRNA, conventional small molecules, antibodies, or other proteins. Our ZFN genome editing technology, which requires only brief cellular expression of ZFNs, enables the permanent disruption or addition of a therapeutically relevant gene in a highly targeted fashion. For example, our *in vivo* genome editing strategy enables targeted insertion of a therapeutic gene into the genome of liver cells. This strategy has the potential to provide an extended or life-long clinical benefit in the treatment of monogenic diseases, such as hemophilia, without the risk of washout of therapeutic genes delivered using non-integrating vectors such as AAV, or the potentially deleterious issues related to random insertion of therapeutic genes into the genome by randomly integrating viral vectors such as lentiviral vectors.
- **Provide therapeutic solutions for targets that cannot be effectively addressed by existing drug modalities.** The sequencing and publication of the human genome and growing information generated by genome-wide association studies have enabled the identification of both genes and regulatory sequences as potential new therapeutic targets. Many of these targets have a direct role in disease processes but cannot be bound or modulated for therapeutic purposes by small molecules, monoclonal antibodies or RNA based therapeutics. Alternative therapeutic approaches are required to modulate the biological activity of these so-called "non-druggable" targets. One such target is the *BCL11A* erythroid enhancer, a regulatory sequence, which we are disrupting using ZFNs in HSPCs in order to elevate levels of fetal globin. This target is being developed in collaboration with Bioverativ as a therapeutic approach for beta-thalassemia and SCD.
- **Provide high specificity and selectivity for targets.** ZFNs and ZFP TFs can be designed to act with high specificity. In addition, as there are only two copies of each gene in a cell, there are generally only two targets per cell for ZFNs and ZFP TFs, which means that ZFNs and ZFP TFs need only to be available in the cell to engage a small number of targets, which may reduce the risk of toxicity. In contrast, drugs that act on protein and RNA targets that are naturally present in higher cellular concentrations may need to be administered in higher concentrations. In addition, because of the higher specificity there may be fewer "off-target effects." Many small molecule and RNA-based approaches either

affect multiple targets demonstrating so-called “off-target effects” or may be toxic in the concentrations required to be therapeutically effective.

- **Provides a genome editing platform with superior qualities for therapeutic development**. Unlike other less developed bacterial-based genome editing platforms, such as CRISPR/Cas9 and TALENS, our proprietary ZFN genome editing technology is based on human proteins that have co-evolved with our complex human genome. The relative complexity of the protein-DNA interaction of our ZFN platform and the ability to engineer the entire protein-DNA interface also gives us the ability to optimize the components of our genome editing technology to drive efficient cutting with specificity. The ZFN-mediated mechanism is optimized for both gene insertion and gene knockout and over years of developing this platform, we have engineered our ZFN proteins to provide maximum design density (1:2 base pairs), giving us the capability to target virtually any sequence of interest and to place a ZFN exactly where we choose with single gene specificity. This precision is particularly critical for therapeutic gene insertion and correction. Finally, we have an established validated process for rapid development of a ZFN clinical lead and have taken our therapeutics candidates through regulatory review and into human clinical studies where we are able to evaluate both the safety and efficacy of our approach.

## THERAPEUTIC PRODUCT DEVELOPMENT

### Our Product Development Programs

***Hemophilia A and B***

Hemophilia, a rare bleeding disorder in which the blood does not clot normally. It is also a monogenic disease, or a disease that is caused by a genetic defect in a single gene. There are several types of hemophilia caused by mutations in genes that encode factors which help the blood clot and stop bleeding when blood vessels are injured. Individuals with hemophilia experience bleeding episodes after injuries and spontaneous bleeding episodes that often lead to joint disease such as arthritis. The most severe forms of hemophilia affect males. The standard treatment for individuals with hemophilia is replacement of the defective clotting factor with regular infusion of recombinant clotting factors or plasma concentrates. These therapies are expensive and sometimes stimulate the body to produce antibodies against the factors that inhibit the benefits of treatment. In these situations, other clotting factors such as Factor VII and X may be used to treat patients.

The most prevalent form of the disease, hemophilia A, is caused by a defect in the clotting Factor 8 gene. According to the National Hemophilia Foundation and the World Federation of Hemophilia, hemophilia A occurs in about one in every 5,000 male births in the United States, with approximately 16,000 males currently affected. Defects in clotting Factor 9 gene lead to hemophilia B. Hemophilia B occurs in about one in every 25,000 male births in the United States, with approximately 4,000 males currently affected.

*SB-525 – Hemophilia A*

We are developing SB-525, a gene therapy product candidate utilizing an AAV carrying a clotting Factor 8 gene construct that is driven by our proprietary synthetic liver specific promoter. In 2016, we presented preclinical data demonstrating production of supraphysiological levels of human Factor VIII clotting protein, or hFVIII, in mice and NHP. In these dose-ranging preclinical studies, mean hFVIII levels of 5 - 230% of normal were observed using AAV doses in the range of 6.00E+11 – 6.00E+12 vg/kg, the most potent dose response reported in NHPs for a human Factor 8 gene construct at the time.

In 2017, we initiated a Phase 1/2 clinical trial, the Alta Study, to evaluate the safety and efficacy of SB-525 in adults with severe hemophilia A. The Alta Study is an open-label, ascending-dose study designed to enroll up to 20 adult subjects across six potential dose cohorts. In August 2017, we announced that the first subject was treated in our Alta Study. We expect to release preliminary data from the Alta Study by mid-2018.

SB-525 has been granted Orphan Drug and Fast Track designations by FDA as well as Orphan Medicinal Product designation by the European Medicines Agency, or EMA. We are developing SB-525 in collaboration with Pfizer, see "—Collaborations—Pfizer Inc."

*SB-FIX – Hemophilia B*

We are developing SB-FIX, an *in vivo* genome editing product candidate, to treat hemophilia B. Utilizing our ZFN genome editing technology, we are adding a new therapeutic copy of the Factor 9 gene precisely into the *Albumin* gene locus in liver cells, and using the strong endogenous Albumin promoter to drive expression of the newly inserted gene. We believe the potential of this approach to provide a permanent correction for a patient may be optimal for a pediatric population by reducing or eliminating the need for chronic infusions of replacement proteins or clotting factor products. We have published data demonstrating the potential utility of this approach for several different monogenic disease applications in addition to hemophilia B.

Preclinical studies of the Albumin genome editing approach have demonstrated that therapeutic levels of Factor IX clotting protein could be generated in a dose-dependent manner in NHPs. There were no significant alterations in circulating Albumin levels. Studies in mice also demonstrated stable Factor IX production for over one year. Preclinical studies in wildtype mice have demonstrated expression of therapeutic levels of human clotting Factor IX protein, or hFIX, from the liver and into the blood for the duration of the 60 week study. Additional preclinical studies in mouse models of hemophilia B demonstrated expression of therapeutic levels of hFIX from the liver and into the blood, which resulted in the correction of the clotting defect in hemophilia B mice treated with a single dose of SB-FIX. SB-FIX was also evaluated in preclinical NHP studies and demonstrated dose-dependent, therapeutic levels of hFIX expression, between 20-50% of normal, in wildtype cynomolgus monkeys, after a single administration of SB-FIX. Levels of hFIX were stable for up to 3 months in treated NHPs. Furthermore, there was a strong dose-response correlation between the level of gene modification at the *Albumin* locus and the levels of hFIX measured in the blood.

In 2016, we initiated a Phase 1/2, open-label, ascending dose clinical trial, the FIXtendz Study, to evaluate safety and efficacy of SB-FIX in adult males with severe hemophilia B. The FIXtendz Study is designed to enroll up to 12 subjects across three dose cohorts. In February 2018, the Medicines and Healthcare Products Regulatory Agency, or MHRA, of the United Kingdom granted the Clinical Trial Authorisation, or CTA, for enrollment of subjects into the ongoing Phase 1/2 clinical trial evaluating SB-FIX for hemophilia B. The CTA permits evaluation of SB-FIX in both adults and adolescents. Once preliminary safety and efficacy have been

demonstrated in the ongoing SB-FIX Phase 1/2 clinical trial in adults (18 years of older), we may begin enrolling adolescents (12 - 17 years of age) into the study.

SB-FIX has been granted Orphan Drug and Fast Track designations by the FDA.

***Lysosomal Storage Disorders***

LSD are a heterogeneous group of rare inherited disorders including: MPS I, MPS II, Fabry disease, Gaucher disease; and many others. These disorders are caused by defects in genes that encode proteins known as enzymes, which break down and eliminate unwanted substances in cells. These enzymes are found in structures called lysosomes which act as recycling sites in cells, breaking down unwanted material into simple products. A defect in a lysosomal enzyme leads to the accumulation of toxic levels of the substance that the enzyme would normally eliminate. These toxic levels may cause cell damage which can lead to serious health problems.

MPS I is caused by mutations in the gene encoding the alpha-L-iduronidase, or IDUA, enzyme, resulting in a deficiency of IDUA enzyme, which is required for the degradation of the glycosaminoglycans, or GAGs, dermatan sulfate and heparin sulfate. The inability to degrade GAGs leads to their accumulation within the lysosomes throughout the body. Individuals with this mutation experience multi-organ dysfunction and damage. Depending on the severity of the mutations and degree of residual enzyme activity, affected individuals may develop enlarged internal organs, joint stiffness, skeletal deformities, corneal clouding, hearing loss and cognition impairments. Three forms of MPS I, in order of increasing severity, include Scheie, Hurler-Scheie and Hurler syndromes. According to the National MPS Society, one in 500,000 births in the United States will result in Scheie syndrome, one in 115,000 births in Hurler/Scheie, and one in 100,000 births results in Hurler syndrome. There are approximately 1,000 MPS I patients in the United States.

MPS II is an X-linked disorder primarily affecting males and caused by mutations in the gene encoding the iduronate-2-sufatase, or IDS, enzyme. This results in a deficiency of IDS enzyme, which is required for the degradation of GAGs. Similar to MPS I, the inability to degrade GAGs leads to their accumulation within the lysosomes throughout the body. Individuals with this mutation experience multi-organ dysfunction and damage. Children with MPS II appear normal at birth but begin showing symptoms of developmental delay by age 2 – 3 years. Depending on the severity of the mutations and degree of residual enzyme activity, affected individuals may develop delayed development, enlarged internal organs, cardiovascular disorders, stunted growth and skeletal abnormalities and hearing loss. The disorder is progressive and symptoms range from mild (normal cognitive function) to severe (cognitively impaired). According to the National MPS Society, one in 100,000 male births in the United States will result in MPS II. There are approximately 500 MPS II patients in the United States.

Fabry disease is an X-linked disorder primarily affecting males and caused by a mutation in the gene encoding the alpha-galactosidase A, or alpha-Gal A, enzyme, resulting in a deficiency of alpha-Gal A enzyme, which is required for the degradation of the ganglioside globotriaosylceramide, a particular type of fatty substance. The inability to degrade this fatty substance leads to its accumulation within the lysosomes throughout the body. Individuals with this mutation experience multi-organ dysfunction and damage. Depending on the severity of the mutations and degree of residual enzyme activity, affected individuals may develop progressive kidney damage, heart attack, stroke, gastrointestinal complications, corneal opacity, tinnitus and hearing loss. Milder forms of the disorder present later in life and affect only the heart or kidneys. According to the National Institutes of Health U.S. National Library of Medicine, one in 40,000 to one in 60,000 male births in the United States will result in Fabry disease. There are approximately 2,200 males with Fabry disease in the United States. This mutation can also occur in females, however is less common and the frequency is unknown.

There are limited treatments currently available for MPS I, MPS II and Fabry disease. For individuals with MPS I, there are only two options: hematopoietic stem cell transplantation, or HSCT, for those with the most severe form of the disease (Hurler) and enzyme replacement therapy, or ERT, for patients with the attenuated forms of the disease (Hurler-Scheie, Scheie). However, the reported mortality rate after HSCT is approximately 15% and the survival rate with successful engraftment is 56%. Most patients with milder forms of the disease receive weekly ERT, usually in a doctor’s office. These IDUA enzyme infusions take on average four to six hours to administer. Weekly and bi-weekly ERT infusions are the only available options for MPS II and Fabry disease, respectively. Because of the availability of few treatment options that effectively and safely treat these diseases, there remains significant unmet medical need.

*SB-318 – MPS I*

We are developing SB-318, an *in vivo* genome editing product candidate, to treat MPS I. Using the same approach as our hemophilia B product candidate, SB-FIX, we are adding a new therapeutic copy of the IDUA gene precisely into the *Albumin* gene locus in the genome of liver cells, using the strong endogenous Albumin promoter to drive expression of the newly inserted gene. We believe the potential of this approach to provide a permanent correction for a patient may be optimal for a pediatric population by reducing or eliminating the need for chronic ERT infusions.

Preclinical mouse model data demonstrated robust levels of IDUA enzyme expression in the liver, blood plasma and spleen of SB-318 treated mice, resulting in a 10-fold increase in IDUA activity, with sustained elevated levels in the blood plasma over the course of the two month study. Additional preclinical mouse model data demonstrated stable production of therapeutic levels of IDUA enzyme from the liver into the circulation and secondary tissues, including the spleen, lung, muscle, heart and brain, after a single intravenous administration of SB-318. This resulted in the significant reduction of GAG biomarkers in all of the tissues. Behavioral data from Barnes maze tests, collected at the end of the four month study, demonstrated statistically significant preservation of cognitive learning and memory in mice treated with SB-318, compared to untreated mice.

In 2017, we initiated an open-label, dose-ascending Phase 1/2 clinical trial, the EMPOWERS Study, to evaluate SB-318 in adult subjects with attenuated MPS I. The EMPOWERS Study is designed to enroll up to nine subjects across three ascending dose cohorts. We expect to present preliminary safety and efficacy data from the EMPOWERS Study in 2018. We plan to submit a CTA in the first half of 2018 to initiate enrollment of adolescent and pediatric subjects in the United Kingdom into the Phase 1/2 clinical trial.

SB-318 MPS I has been granted Orphan Drug, Rare Pediatric Disease and Fast Track designations by the FDA, as well as Orphan Medicinal Product designation by the EMA.

*SB-913 – MPS II*

We are developing SB-913, an *in vivo* genome editing product candidate, to treat MPS II. Similar to SB-318, we are using our ZFN genome editing technology to add a new therapeutic copy of the IDS gene precisely into the *Albumin* gene locus in the genome of liver cells, using the strong endogenous Albumin promoter to drive expression of the newly inserted gene.

Preclinical mouse model data demonstrated robust levels of IDS enzyme expression in the liver, blood plasma and spleen of SB-913 treated mice, resulting in a 100-fold increase in IDS activity, with sustained elevated levels in the blood plasma over the course of the entire study. Additional preclinical mouse model data demonstrated stable production of therapeutic levels of IDS enzyme from the liver into the circulation and additional secondary tissues, including the spleen, lung, muscle, heart and brain, after a single intravenous administration of SB-913. This resulted in the significant reduction of GAG biomarkers across all the tissues. Behavioral data from Barnes maze tests, collected at the end of the four month study demonstrated statistically significant preservation of cognitive learning and memory in mice treated with SB-913, compared to untreated mice.

In 2017, we initiated an open-label, dose-ascending Phase 1/2 clinical trial, the CHAMPIONS Study, to evaluate the safety and efficacy of SB-913 in adult male subjects with attenuated MPS II, designed to enroll up to nine subjects across three ascending dose cohorts. In November 2017, we announced that the first subject had been treated in the CHAMPIONS Study. In February 2018, we presented preliminary six-week safety data from the first subject enrolled in the CHAMPIONS Study. The data demonstrated that the subject tolerated the infusion well. Mild (Grade 1) adverse events related to the study drug were reported on the fourth day after dosing. These were dizziness, weakness and frequent urination, all of which resolved within one day without treatment. No other adverse events related to the study drug have been observed. Liver function tests have remained within normal limits for the patient since the infusion. We expect to present additional safety and efficacy data from the EMPOWERS Study by mid 2018. We plan to submit a CTA in the first half of 2018 to initiate enrollment of adolescent and pediatric subjects in the United Kingdom into the Phase 1/2 clinical trial.

SB-913 has been granted Orphan Drug, Rare Pediatric Disease and Fast Track designations by the FDA, as well as Orphan Medicinal Product designation by the EMA.

*ST-920 — Fabry Disease*

We are developing ST-920 for Fabry disease, a gene therapy product candidate utilizing an AAV, carrying a galactosidase alpha, or GLA, gene construct, coding for the alpha-Gal A enzyme, driven by our proprietary synthetic liver specific promoter. We are currently conducting IND-enabling studies for ST-920 and expect to file an IND application with the FDA by mid 2018.

***Hemoglobinopathies: Beta-thalassemia and Sickle Cell Disease***

Mutations in the gene encoding beta-globin, the oxygen carrying protein of red blood cells, lead to hemoglobinopathies such as beta-thalassemia and sickle cell disease, or SCD. Both diseases manifest in the months after birth, when patients switch from producing functional fetal gamma-globin to a mutant form of adult beta-globin, which results in their condition. Naturally occurring increased levels of fetal hemoglobin have been shown to reduce the severity of both beta-thalassemia and SCD.

Beta-thalassemia is a rare disorder that results in greatly impaired production of healthy red blood cells despite bone marrow over activity, leading to life-threatening anemia, enlarged spleen, liver and heart, and bone abnormalities. We are focused on Beta-thalassemia major which is a severe form of thalassemia that requires regular, often monthly, blood transfusions and subsequent iron-chelation therapy to treat iron overload. The Centers for Disease Control and Prevention, or CDC, estimates that 1,000 people have beta-thalassemia major in the United States, and an unknown number carry the genetic trait and can pass it on to their children.

In SCD, the mutation causes the red blood cells to form an abnormal sickle or crescent shape. The cells are fragile and deliver less oxygen to the body's tissues. They can also get stuck more easily in small blood vessels and break into pieces that can interrupt healthy blood flow which further decrease the amount of oxygen flowing to body tissues. Almost all patients with SCD experience these painful vaso-occlusive crises, which can last from hours to days and may cause irreversible organ damage. Current standard of care is to manage and control symptoms, and to limit the number of crises. Treatments include administration of hydroxyurea, blood transfusions, iron-chelation therapy, pain medications and antibiotics. The CDC estimates that there are 90,000 to 100,000 Americans living with SCD, which occurs in approximately 1 out of every 365 African-American births and 1 out of every 16,300 Hispanic-American births.

*ST-400 – Beta-thalassemia; BIVV-003 — SCD*

We are developing ST-400 for the treatment of beta-thalassemia and our collaboration partner, Bioverativ, is developing BIVV-003 for the treatment of SCD. Both ST-400 and BIVV-003 are genome-edited cell therapies that use our ZFN genome editing technology to modify a patient's own, or autologous, HSPCs to produce functional red blood cells using fetal hemoglobin. Our genome editing technology can be used in HSPCs to precisely disrupt regulatory sequences that control the expression of key transcriptional regulators, such as the *BCL11A* erythroid enhancer sequence, to reverse the switch from expression of the mutant adult beta-globin back to the production of functional fetal gamma-globin.

The current standard of care for beta-thalassemia includes chronic blood transfusions, while the standard of care for SCD is a bone marrow transplant, or BMT, of HSPCs from a "matched" related donor, or an allogeneic BMT. However, these therapies are limited due to the risk of iron overload with blood transfusions, requiring subsequent iron chelation therapy, and the scarcity of matched donors and the significant risk of Graft versus Host Disease, or GvHD, with BMTs after transplantation of the foreign cells. By performing genome editing in HSPCs that are isolated from and subsequently returned to the same patient (*i.e.*, an autologous HSPC transplant), our approach has the potential to address these limitations. The goal of this approach is to develop a one-time long-lasting treatment for beta-thalassemia and SCD.

Preclinical data from clinical-scale *in vitro* studies have demonstrated that ST-400 and BIVV-003 can be manufactured by reproducible, high-level, ZFN-mediated modification in HSPCs mobilized in peripheral blood at clinical production scale (>$10^8$ cells), with an on-target modification efficiency of greater than 80%. Furthermore, erythroid differentiation of enhancer targeted cells showed modification of both *BCL11A* erythroid enhancer alleles in more than 50% of the erythroid colonies and resulted in a greater than four-fold increase in gamma globin mRNA and protein production, compared to controls. Specificity studies of ST-400 and BIVV-003 revealed no detectable off-target activity using state-of-the art, unbiased, highly sensitive oligo-capture assays. Preclinical data from *in vivo* studies in immune-deficient mice demonstrated robust long-term (19 weeks) engraftment and that targeted gene modification was maintained through multi-lineage differentiation in the bone marrow and peripheral blood.

Our IND for ST-400 was cleared by the FDA in September 2017, and we have designed an open-label, single arm Phase 1/2 clinical trial to evaluate the safety and efficacy of ST-400 in up to 6 adult subjects with beta-thalassemia. We expect to initiate this trial in early 2018.

Bioverativ is our partner for ST-400 and is responsible for the clinical development of BIVV-003 for SCD. For more information relating to our collaboration with Bioverativ, see "—Collaborations—Bioverativ."

***CNS-Tauopathies***

We are using our ZFP-TF gene regulation platform to develop potential gene therapies for tauopathy disorders, including Alzheimer's disease and other neurodegenerative diseases. We believe a reduction in tau protein levels can help reduce intracellular tau protein aggregation and the formation of neurofibrillary tangles in neurons, potentially ameliorating or reversing disease progression. We believe this approach may have a significant advantage compared to monoclonal antibody-based approaches to Alzheimer's disease and other tauopathy disorders because it is designed to selectively down-regulate the *tau* gene in neurons with the goal of reducing all forms of the tau protein globally across the CNS. In contrast, monoclonal antibody-based approaches are limited in that they can only bind to certain forms of tau proteins.

Preclinical studies in wildtype mice demonstrated that a single administration of *tau*-targeting ZFP-TFs resulted in up to 70% reduction of tau mRNA and protein expression across the entire CNS, as well as sustained and well-tolerated ZFP-TF expression with minimal impact on inflammatory markers. Additional preclinical studies in amyloid mouse models of Alzheimer's disease demonstrated up to 80% reduction of tau protein levels in the brain and cerebrospinal fluid, as well as significantly reduced neuritic dystrophy after a single administration of ZFP-TFs in mice with established disease pathology.

We are currently conducting preclinical studies in NHPs to evaluate our ZFP-TFs in larger mammalian species. We intend to seek a partner with disease area expertise for the clinical development and commercialization of this program.

***C9ORF72–linked ALS/FTLD***

In December 2017, we entered into a research collaboration and license agreement with Pfizer to develop and commercialize gene therapy products that use our ZFP TFs to treat ALS and FTLD linked to mutations of the *C9ORF72* gene. ALS and FTLD are part of a spectrum of neurodegenerative disorders caused by mutations in the *C9ORF72* gene that involve hundreds of additional repetitions of a six base pair sequence of DNA. This ultimately leads to the deterioration of motor neurons, in the case of ALS, or neurons in the frontal and temporal lobes, in the case of FTLD. Currently, there are no cures to halt or reverse the progression of ALS or FTLD. The *C9ORF72* mutation is linked to approximately one-third of cases of familial ALS. We and Pfizer plan to investigate allele-specific ZFP-TFs with the potential to differentiate the mutant *C9ORF72* allele from the wildtype allele and to specifically down-regulate expression of the mutant form of the gene.

We also have research stage programs in other monogenic diseases, immunology and cancer immunotherapy. See "—Collaborations—Pfizer Inc.," for more information relating to this agreement.

***Huntington's Disease***

Huntington's disease is an inherited, progressive neurologic disease for which there is no treatment or cure. The disease is caused by a particular type of mutation in a single gene, the *HTT* gene. Most patients inherit one normal and one defective or mutant copy of the *HTT* gene, which causes Huntington's disease. The mutation is characterized by expansion of a repeated stretch of DNA sequence within the gene called a "CAG repeat." A normal copy of the *HTT* gene usually has 10 to 29 of these CAG repeats but a defective copy has many more—generally greater than 39 repeats. While the protein produced by the normal copy of the gene appears to be essential for development (mice lacking the gene do not survive to birth), the product of the mutated gene is damaging to cells. Symptoms, which include deterioration of muscle control, cognition and memory, usually develop between 35 and 44 years of age. It is known that the greater the number of CAG repeats, the earlier the onset. Huntington's disease is usually fatal within 15 to 20 years after the onset of symptoms. The disease has a high prevalence for an inherited disorder. According to the Huntington's Disease Society of America, approximately 30,000 people in the United States have Huntington's disease. In addition, it is estimated that approximately 200,000 people in the United States are at risk of developing the disease.

Research in animal models of the disease has shown that lowering the levels of the mutant HTT protein can prevent, or even reverse, disease progression. However, to date most "HTT-lowering" methods decrease levels of both the normal and mutant forms of HTT, raising potential safety concerns given the importance of normal HTT protein. In collaboration with Shire, we are developing ZFP TFs that can selectively repress the expression of the mutant disease-causing form of HTT while leaving expression levels of the normal gene unchanged. Preclinical studies in animal models of the disease are ongoing and Shire is responsible for all clinical development activities including filing the IND application. For more information on our collaboration with Shire, see "—Collaborations—Shire International GmbH."

**Legacy Clinical Research Programs**

***Human Immunodeficiency Virus, or HIV, and Acquired Immunodeficiency Syndrome, or AIDS***

HIV infection results in the death of immune system cells, particularly CD4+ T-cells, and thus leads to AIDS, a condition in which the body's immune system is depleted to such a degree that the patient is unable to fight off common infections. Ultimately,

these patients succumb to opportunistic infections or cancers. According to the most recent data from the CDC, it is estimated that there were 1.0 million people living with HIV/AIDS in the United States in 2015, and there are now over 36.7 million people living with HIV and AIDS worldwide.

*Current Treatments and Unmet Medical Need*

Currently, there are over 30 antiretroviral drugs approved by the FDA to treat people infected with HIV. While these drugs can suppress virus in the blood to undetectable levels, they cannot eliminate the reservoir of cells containing genomically-integrated HIV from the body. Hence, individuals infected with HIV need to take antiretroviral drugs continuously. The drugs are expensive and can have significant side effects over time. There is no therapeutic approach available that protects CD4+ T-cells, suppresses viral load, reduces the viral reservoir and does not require daily dosing.

*SB-728 – HIV/AIDS*

SB-728 uses our ZFN-mediated genome editing technology to disrupt the *CCR5* gene in cells of a patient's immune system to make these cells permanently resistant to HIV infection. CCR5 is a co-receptor for HIV entry into T-cells and if CCR5 is not expressed on the cell surface HIV cannot infect them or infects them with lower efficiency. The aim of this approach is to provide the patient with a population of HIV-resistant cells that can fight HIV and opportunistic infections, by mimicking the naturally occurring *CCR5 delta-32* mutation that renders a population of individuals largely resistant to infection by the most common strains of HIV. We are evaluating this genome editing approach to disrupt the *CCR5* gene in both T cells and HSPCs as two potential therapeutic candidates, SB-728-T and SB-728-HSPC, respectively.

We have conducted several clinical trials with SB-728-T, which were designed to evaluate safety and tolerability of SB-728-T, as well as the effect of SB-728-T on subjects' CD4 T-cell counts, levels of CCR5-modified T-cells, viral burden during a treatment interruption (TI) from anti-retroviral therapy, or ART, and measure of the viral reservoir. The data to date have demonstrated an ability to efficiently knock out the *CCR5* gene in T-cells by ZFN-driven genome editing and grow the cells *ex vivo*, that a single infusion of SB-728-T led to proven engraftment, expansion and persistence of T-cells *in vivo*, sustained increases in CD4 T-cell counts, a significant and continuous decay of the HIV reservoir and the ability of certain subjects to control their viral loads for prolonged periods in the absence of ART. Over 100 subjects have been treated to date and the treatment appears to be well-tolerated.

In addition, we have an ongoing investigator-sponsored Phase 1/2 clinical trial (SB-728mR-HSPC) to investigate SB-728-HSPC as a self-renewable and potentially lifelong source of HIV-resistant immune cells.

We plan to advance the SB-728 program through externally-funded collaborations.

**COLLABORATIONS**

We have established collaborative and strategic partnerships for several of our therapeutic programs and also for several non-therapeutic applications of our technology. We will continue to pursue further partnerships when appropriate with selected pharmaceutical and biotechnology to fund internal research and development activities and to assist in product development and commercialization. We are applying our ZFN technology platform to several commercial applications in which our products provide us and our strategic partners and collaborators with potential technical, competitive and economic advantages.

***Kite Pharma, Inc.***

In February 2018, we entered into a collaboration and license agreement with Kite, a wholly-owned subsidiary of Gilead, for the research, development and commercialization of potential engineered cell therapies for cancer. Kite will be responsible for all clinical development and commercialization of any resulting products. Except for confidentiality obligations and certain representations, warranties and covenants, which are effective upon execution, the effectiveness of the Kite agreement is subject to the expiration or termination of all applicable waiting periods under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and other customary closing conditions.

Subject to the terms of this agreement, we will, upon effectiveness of this agreement, grant Kite an exclusive, royalty-bearing, worldwide, sublicensable license, under our relevant patents and know-how, to develop, manufacture and commercialize, for the purpose of treating cancer, specific cell therapy products that may result from the research program and that are engineered *ex vivo* using selected ZFNs and AAVs developed under the research program, to express CARs, TCRs or NKRs directed to candidate targets.

During the research program term and subject to certain exceptions, except pursuant to this agreement, we will be prohibited from researching, developing, manufacturing and commercializing, for the purpose of treating cancer, any cell therapy product that, as a result of *ex vivo* genome editing, expresses a CAR, TCR or NKR that is directed to a target expressed on or in a human cancer cell. After the research program term concludes and subject to certain exceptions, except pursuant to this agreement, we will be prohibited

from developing, manufacturing and commercializing, for the purpose of treating cancer, any cell therapy product that, as a result of *ex vivo* genome editing, expresses a CAR, TCR or NKR that is directed to a candidate target.

Upon the effectiveness of this agreement, we will receive a $150 million upfront payment from Kite. In addition, Kite will reimburse our direct costs to conduct the joint research program, and Kite will be responsible for all subsequent development, manufacturing and commercialization of any licensed products. We are also eligible to receive contingent development- and sales-based milestone payments that could total up to $3.01 billion if all of the specified milestones set forth in this agreement are achieved. Of this amount, approximately $1.26 billion relates to the achievement of specified research, clinical development, regulatory and first commercial sale milestones, and approximately $1.75 billion relates to the achievement of specified sales-based milestones if annual worldwide net sales of licensed products reach specified levels. Each development- and sales-based milestone payment is payable (i) only once for each licensed product, regardless of the number of times that the associated milestone event is achieved by such licensed product, and (ii) only for the first ten times that the associated milestone event is achieved, regardless of the number of licensed products that may achieve such milestone event. In addition, we will be entitled to receive escalating, tiered royalty payments with a percentage in the single digits based on potential future annual worldwide net sales of licensed products. These royalty payments will be subject to reduction due to patent expiration, entry of biosimilar products to the market and payments made under certain licenses for third-party intellectual property.

Kite has the right to terminate this agreement, in its entirety or on a per licensed product or per candidate target basis, for any reason after a specified notice period. Each party has the right to terminate this agreement on account of the other party's bankruptcy or material, uncured breach.

***Pfizer Inc.***

We have two separate collaboration agreements with Pfizer Inc., or Pfizer. In May 2017, we entered into an exclusive, global collaboration and license agreement with Pfizer, pursuant to which we established a collaboration for the research, development and commercialization of SB-525, our gene therapy product candidate for hemophilia A, and closely related products.

Under this agreement, we are responsible for conducting the Phase 1/2 clinical trial and certain manufacturing activities for SB-525, while Pfizer is responsible for subsequent worldwide development, manufacturing, marketing and commercialization of SB-525. We may also collaborate in the research and development of additional AAV-based gene therapy products for hemophilia A.

We received an upfront fee of $70.0 million and are eligible to receive development milestone payments contingent on the achievement of specified clinical development, intellectual property, regulatory and first commercial sale milestones for SB-525 and potentially other products. The total amount of potential clinical development, intellectual property, regulatory, and first commercial sale milestone payments, assuming the achievement of all specified milestones in this agreement, is $475.0 million, which includes up to $300.0 million for SB-525 and up to $175.0 million for other products that may be developed under the agreement, subject to reduction on account of payments made under certain licenses for third party intellectual property. In addition, Pfizer agreed to pay us royalties for each potential licensed product developed under the agreement that are an escalating tiered, double-digit percentage of the annual net sales of such product and are subject to reduction due to patent expiration, entry of biosimilar products to the market and payment made under certain licenses for third party intellectual property.

Subject to the terms of the agreement, we granted Pfizer an exclusive, worldwide, royalty-bearing license, with the right to grant sublicenses, to use certain technology controlled by us for the purpose of developing, manufacturing and commercializing SB-525 and related products. Pfizer granted us a non-exclusive, worldwide, royalty free, fully paid license, with the right to grant sublicenses, to use certain manufacturing technology developed under the agreement and controlled by Pfizer to manufacture our products that utilize the AAV delivery system. During a specified period, neither we nor Pfizer will be permitted to clinically develop or commercialize, outside of the collaboration, certain AAV-based gene therapy products for hemophilia A.

Unless earlier terminated, the agreement has a term that continues, on a per product and per country basis, until the later of (i) the expiration of patent claims that cover the product in a country, (ii) the expiration of regulatory exclusivity for a product in a country, and (iii) fifteen years after the first commercial sale of a product in a country. Pfizer has the right to terminate the agreement without cause in its entirety or on a per product or per country basis. The agreement may also be terminated by either party based on an uncured material breach by the other party or the bankruptcy of the other party. Upon termination for any reason, the license granted by us to Pfizer to develop, manufacture and commercialize SB-525 and related products will automatically terminate. Upon termination by us for cause or by Pfizer any country or countries, Pfizer will automatically grant us an exclusive, royalty-bearing license under certain technology controlled by Pfizer to develop, manufacture and commercialize SB-525 in the terminated country or countries.

In December 2017, we entered into a separate exclusive, global collaboration and license agreement with Pfizer for the development and commercialization of potential gene therapy products that use ZFP-TFs to treat ALS and FTLD linked to mutations

of the *C9ORF72* gene. Pursuant to this agreement, we agreed to work with Pfizer on a research program to identify, characterize and preclinically develop ZFP-TFs that bind to and specifically reduce expression of the mutant form of the *C9ORF72* gene.

We received a $12.0 million upfront payment from Pfizer and are eligible to receive up to $60.0 million in development milestone payments from Pfizer contingent on the achievement of specified preclinical development, clinical development and first commercial sale milestones, and up to $90.0 million commercial milestone payments if annual worldwide net sales of the licensed products reach specified levels. In addition, Pfizer will pay us royalties based on an escalating tiered, mid- to high-single digit percentage of the annual worldwide net sales of the licensed products. These royalty payments are subject to reduction due to patent expiration, entry of biosimilar products to the market and payments made under certain licenses for third party intellectual property. Each party will be responsible for the cost of its performance of the research program. Pfizer will be operationally and financially responsible for subsequent development, manufacturing and commercialization of the licensed products.

Subject to the terms of the agreement, we granted Pfizer an exclusive, royalty-bearing, worldwide, license under our relevant patents and know-how to develop, manufacture and commercialize gene therapy products that use resulting ZFP-TFs that satisfy pre-agreed criteria. During a specified period, neither our company nor Pfizer will be permitted to research, develop, manufacture or commercialize outside of the collaboration any zinc finger proteins that specifically bind to the *C9ORF72* gene.

Unless earlier terminated, the agreement has a term that continues, on a per licensed product and per country basis, until the later of (i) the expiration of patent claims that cover the licensed product in a country, (ii) the expiration of regulatory exclusivity for a licensed product in a country, and (iii) fifteen years after the first commercial sale of a licensed product in a major market country. Pfizer also has the right to terminate the agreement without cause in its entirety or on a per product or per country basis. The agreement may also be terminated by either party based on an uncured material breach by the other party or the bankruptcy of the other party. The agreement will also terminate if we are unable to identify any lead candidates for development within a specified period of time or if Pfizer elects not to advance a lead candidate beyond a certain development milestone within a specified period of time. Upon termination for any reason, the license granted by us to Pfizer to develop, manufacture and commercialize licensed products under the agreement will automatically terminate. Upon termination by us for cause or by Pfizer without cause for any licensed product or licensed products in any country or countries, we will have the right to negotiate with Pfizer to obtain a non-exclusive, royalty-bearing license under certain technology controlled by Pfizer to develop, manufacture and commercialize the licensed product or licensed products in the terminated country or countries.

Following termination by us for Pfizer's material breach, Pfizer will not be permitted to research, develop, manufacture or commercialize ZFPs that specifically bind to the *C9ORF72* gene for a period of time. Following termination by Pfizer for our material breach, we will not be permitted to research, develop, manufacture or commercialize ZFPs that specifically bind to the *C9ORF72* gene for a period of time.

***Bioverativ Inc.***

We are party to an exclusive worldwide collaboration and license agreement with Bioverativ to develop therapeutics for hemoglobinopathies, focused on beta-thalassemia and SCD. Under the agreement, we are jointly conducting two research programs: the beta-thalassemia program and the SCD program. In the beta-thalassemia program, we are responsible for all discovery, research and development activities through the first human clinical trial. In the SCD program, both parties are responsible for research and development activities through the submission of an IND application for ZFP therapeutics intended to treat SCD. Bioverativ reimburses us for agreed upon internal and external program-related costs.

Under both programs, Bioverativ is responsible for subsequent worldwide clinical development, manufacturing and commercialization of licensed products developed under the agreement. At the end of the specified research terms for each program or under certain specified circumstances, Bioverativ has the right to step in and take over any of our remaining activities. Furthermore, we have an option to co-promote in the United States any licensed products to treat beta-thalassemia and SCD developed under the agreement, and Bioverativ will compensate us for such co-promotion activities. Subject to the terms of the agreement, we have granted Bioverativ an exclusive, royalty-bearing license, with the right to grant sublicenses, to use certain ZFP and other technology controlled by us for the purpose of researching, developing, manufacturing and commercializing licensed products developed under the agreement. We have also granted Bioverativ a non-exclusive, worldwide, royalty-free, fully paid license, with the right to grant sublicenses, under our interest in certain other intellectual property developed pursuant to the agreement. During the term of the agreement, we are not permitted to research, develop, manufacture or commercialize, outside of the agreement, certain gene therapy products that target genes relevant to the licensed products.

Under the agreement, we received an upfront license fee of $20.0 million and are eligible to receive development and sales milestone payments upon the achievement of specified regulatory, clinical development and sales milestones. The total amount of potential regulatory, clinical development, and sales milestone payments, assuming the achievement of all specified milestones in the agreement, is $276.3 million. In addition, we will receive royalty payments for each licensed product that are a tiered double-digit percentage of annual net sales of each product.

The agreement may be terminated by (i) us or Bioverativ for the uncured material breach of the other party, (ii) us or Bioverativ for the bankruptcy or other insolvency proceeding of the other party; (iii) Bioverativ, upon 180 days' advance written notice to us and (iv) Bioverativ, for certain safety reasons upon written notice to, and after consultation with, us. As a result, actual future milestone payments could be lower than the amounts stated above.

***Shire International GmbH***

We are party to a collaboration and license agreement with Shire International GmbH, or Shire, to research, develop and commercialize a ZFP therapeutic for treating Huntington's disease. We received an upfront license fee of $13.0 million. Shire does not have any milestone payment obligations, but is required to pay single digit percentage royalties to us, up to a specified maximum cap, on the commercial sales of therapeutic products for Huntington's disease. We are required to pay single digit percentage royalties to Shire, up to a specified maximum cap, on commercial sales of therapeutic products from programs returned under the original agreement (which include blood clotting Factors VIII and IX) that use two zinc fingers.

Pursuant to the agreement, we granted Shire an exclusive, world-wide, royalty-bearing license, with the right to grant sublicenses, to use our ZFP technology for the purpose of developing and commercializing human therapeutic and diagnostic products for the *HTT* gene. During the term of the agreement, we are not permitted to research, develop or commercialize, outside of the agreement, certain products that target the *HTT* gene. We satisfied the deliverables and research services responsibilities within the amended arrangement which were completed in 2017. The agreement may be terminated by (i) us or Shire, in whole or in part, for the uncured material breach of the other party, (ii) us or Shire for the bankruptcy or other insolvency proceeding of the other party and (iii) Shire, in its entirety, effective upon at least 90 days' advance written notice.

***Other Partnerships***

In addition to our partnerships for the development of human therapeutic applications, we have also licensed our technology in several other areas, such as plant agriculture and research reagents, including the production of transgenic animals and cell-line engineering. These license partners include Dow AgroSciences LLC, Sigma-Aldrich Corporation, Genentech, Inc., Open Monoclonal Technology, Inc. and F. Hoffmann-La Roche Ltd and Hoffmann-La Roche Inc.

**INTELLECTUAL PROPERTY**

Patents and licenses are important to our business. Our strategy is to file or license patent applications to protect technology, inventions and improvements to inventions that we consider important for the development of our genome editing and gene regulation technology. We seek patent protection and licenses that relate to our technology and candidates in our pipeline and/or may be important to our future. We have filed numerous patents and patent applications with the United States Patent and Trademark Office, or U.S. PTO, and foreign jurisdictions. This proprietary intellectual property includes methods relating to the design of zinc finger, Transcription activator-like effector, or TALE, proteins and Clustered Regularly Interspaced Short Palindromic Repeats, or CRISPR/Cas editing systems, therapeutic applications of genome editing technology, enabling technologies related to our platform and the use of genome editing across a variety of applications. We rely on a combination of patent, copyright, trademark, proprietary know–how, continuing technological innovations, trade secret laws, as well as confidentiality agreements, materials transfer agreements, research agreements and licensing agreements, to establish and protect our proprietary rights.

**In-Licensed Technology**

We have licensed intellectual property directed to the design, selection, and use of ZFPs, ZFNs and ZFP TFs for genome editing and gene regulation from the Massachusetts Institute of Technology, Johnson & Johnson, The Scripps Research Institute, the California Institute of Technology and the University of Utah. These licenses grant us rights to make, use and sell ZFPs, ZFNs and ZFP TFs under 9 families of patent filings. As of February 15, 2018, these patent filings have resulted in over 10 issued U.S. patents and over 40 granted foreign patents are still active, with 3 currently pending U.S. patent applications and 8 pending applications in foreign patent offices. We have non-exclusive licenses from the NIH for intellectual property related to the composition of the AAV5 vector and to methods of production of AAV, both of which will expire in 2021.

We entered into a patent license agreement with the Massachusetts Institute of Technology, or MIT, in May 1996, as subsequently amended, whereby MIT granted us a worldwide exclusive license to technology and patents relating to the design, selection and use of ZFPs for all fields of use, including the right to sublicense. Under the patent license agreement, we are obligated to pay an annual license fee, low single-digit royalties of product sales, sublicense issuance fees and annual sublicense maintenance fees, a percentage of our sublicense revenues, and milestone payments upon achievement of certain commercial development milestones. The aggregate milestone payments under the patent license agreement are $450,000, of which $150,000 has been paid. At our request, the patent license has been amended to return some of the intellectual property that was added via amendment after the

original agreement was put in place. This does not affect the development of our technology. The patent license agreement still expires upon the expiration of the last patent covered by the remainder of patents under the license agreement. Based on currently licensed patents, the patent license agreement will expire in October 2019. MIT may terminate the license agreement upon a material default by us that remains uncured following written notice. We may terminate the license agreement at any time upon six months' written notice.

We entered into a sublicense agreement with Johnson & Johnson in May 1996, whereby Johnson & Johnson granted us a worldwide exclusive sublicense to technology and patents for the research, development and commercialization of human and animal therapeutic and diagnostic products using engineered ZFPs, including the right to sublicense. These patents were originally exclusively licensed by Johnson & Johnson from The Scripps Research Institute. Under the sublicense agreement, we will pay low single-digit royalty payments based upon sales of license products by us or our sublicensees and a milestone payment upon the achievement of a commercial development milestone. The sublicense agreement expires upon the expiration of the last patent covered by the sublicense agreement. Based on currently issued patents and currently filed patent applications, the sublicense agreement will expire on or about June 5, 2018. Johnson & Johnson has the right to terminate the sublicense agreement upon a breach or default by us that remains uncured following written notice of such default. We may terminate the sublicense agreement at any time upon sixty days' written notice.

We entered into a license agreement with The Scripps Research Institute in March 2000, as subsequently amended, whereby The Scripps Research Institute granted us a worldwide exclusive license to technology and patents for the research, development and commercialization of products and services using engineered ZFPs, excluding the use of these engineered ZFPs in plant agriculture, therapeutics and diagnostics. Under the license agreement, we are required to pay a low-single digit royalty on sales of licensed products by us and our sublicensees, subject to an annual minimum. The license agreement expires upon the expiration of the last patent covered by the license agreement. Based on currently issued patents and currently filed patent applications, the license agreement will expire on or about May 27, 2018. Each party may terminate the license agreement upon a material default by the other party that remains uncured following written notice.

We entered into a license agreement with California Institute of Technology, or CalTech, in November 2003, as subsequently amended, whereby CalTech granted us a worldwide exclusive license to certain patents related to chimeric nucleases for genome targeting for all fields of use, including the right to sublicense. In consideration of the license grant, we issued certain shares of our common stock to CalTech, but have no obligations to make milestone or royalty payments to CalTech. The license agreement expires upon the expiration of the intellectual property rights licensed to us. Based on currently issued patents and currently filed patent applications, the license agreement will expire in September 2023. Each party may terminate the license agreement upon a material default by the other party that remains uncured following written notice. We may terminate the agreement at any time upon 30 days written notice.

We entered into a patent license agreement with the University of Utah Research Foundation, in September 2004, as subsequently amended, whereby Utah granted us a worldwide license to technology and patents relating to the use of ZFNs for all fields of use, including the right to sublicense. Under the patent license agreement, we are obligated to pay an annual license fee, low single-digit royalties of product sales, sublicense issuance fees and annual sublicense maintenance fees, a percentage of our sublicense revenues, and milestone payments upon achievement of certain commercial development milestones. The license agreement expires on the expiration of the last patent covered by the patent license agreement. Based on currently issued patents, the license agreement will expire in March 2025. Utah may terminate the license agreement upon a default by us that remains uncured following written notice. We may terminate the agreement at any time upon 90 days written notice.

We have entered into licenses potentially useful for specific therapeutic uses of our genome editing technologies with the Regents of the University of California and the Children's Medical Center Corporation. The patents included in these licenses relate to CNS disorders and hemoglobinopathies, respectively. These licenses include 2 patent families, including 3 issued U.S. patents, over 20 pending foreign patents and 2 pending U.S. patents.

**Our Intellectual Property**

In addition to our in-licensed patent portfolio, as of February 15, 2018, we had over 150 families of owned or co-owned patent filings, over 180 issued U.S. patents, over 600 granted foreign patents, over 110 pending U.S. patent applications and over 490 pending foreign patent applications. These patent filings are directed to the design, composition and use of ZFPs, ZFNs, ZFP TFs, TALE proteins and CRISPR/Cas systems and other technology related to our programs.

Some of the earliest zinc finger patents in our portfolio began expiring in 2015, with the average expiration of our currently issued patents expiring being late-2026. However, we have continued to build on this patent portfolio and have been issued additional

patents and have applications pending that provide protection for our ZFP technology. These patents in our portfolio may be subject to Patent Term Adjustment (due to delays in patent prosecution by the USPTO), Patent Term Extension (due to review of a patented product by a regulatory agency) or terminal disclaimer. Additionally, patents that may be issued from our pending applications will extend the patent exclusivity of our patent estate. Accordingly, all dates given above for patent expirations are estimates and the actual dates of expirations may differ.

We believe that our licensed patents and patent applications, as well as our issued patents and pending patent applications, in the aggregate, will provide us with a substantial intellectual property position in our commercial development of our genome editing, gene therapy, cell therapy and gene regulation programs. In this regard, patents issued to us, applied for by us, or exclusively and non-exclusively licensed to us, cover the following types of inventions, processes and products:

- *ZFP and ZFN design, engineered nucleases, and compositions:* includes DNA target site selection and zinc finger binding domain design and nuclease domain design, DNA nickases, target site arrays, ZFP libraries databases and methods of construction, as well as methods to increase zinc finger binding specificity, nuclease, linker designs (see newly issued US9567609) and methods of making modified plant ZFPs;
- *ZFP targeted regulation of endogenous genes:* methods relating to activation and inhibition of endogenous cellular genes, identification of accessible regions within chromatin, and regulation of endogenous plant genes;
- *ZFP Therapeutics:* Treatment of Huntington's disease (see U.S. patent publication US2017-0096460), cancer therapeutics, treatment of head and neck cancer, glioblastoma, modulation of cardiac contractility and methods to regulate the glucocorticoid receptor, treatments for HIV, and self-regulating promoters (see newly issued US9624498);
- *Nuclease Therapeutics:* Treatments for HIV (see newly issued US9566352 and US 9757420), beta-thalassemia and SCD (see newly issued US9650698), hemophilia (see newly issued US9771403, US9777281 for hemophilia B) LSD (see newly issued US9877988), genome editing, Parkinson's Disease, regulation of the expression of PD1; Immunomodulatory therapeutics; Cystic Fibrosis; CNS disease; Severe combined immunodeficiency (see newly issued US9161090 and US9833479, Modified T cells (See newly issued US9597357) including HLA knock out (see newly issued US9782437) and methods of editing stem cells (see newly issued US9834787);
- *Non-Therapeutic Applications of ZFPs:* Identification of genes, analysis of gene regulation, structure and biological function, methods of agricultural biotechnology, methods of altering cellular differentiation state;
- *Non-Therapeutic Applications of ZFNs:* Methods for identification of regulatory DNA sequences, prediction of patient response to drug therapeutics, and development of cell lines for improved protein production, methods of transgenic animal development (see newly issued UP9567573) , and methods of introducing exogenous nucleic acids of interest into a safe harbor locus, cleavage of specific miRNAs (see newly issued US9574211);
- *Donor DNA design:* Methods for designing optimal donors for transgene delivery;
- *Pan-nuclease, Non-ZFP nucleases, methods of design and use* (see newly issued US9765361), pan-nuclease nickases (see newly issued US9631186);
- *Engineering of stem cells* Methods of modulating stem cell differentiation (see newly issued US9624509); and
- *Methods for genome editing*.

We have been advised that certain aspects of our technology can give us and our collaborators independence from third party patent claims to gene sequences. In general, under U.S. patent law, a patent may be obtained for any new and useful process, machine, manufacture, or composition of matter. An underlying theme of U.S. patent law, as related to biotechnology, is that the sequence of a gene, as it exists in the chromosome, is not patentable, even when newly discovered, although a cDNA corresponding to the transcription product of that gene may be in select instances. Accordingly, U.S. patent claims to DNA sequences can cover only isolated cDNAs, or modified nucleic acid sequences (e.g., a purified DNA fragment or a DNA sequence inserted into a vector). We have been advised that U.S. patent claims to DNA sequences do not, and cannot, cover gene sequences as they exist in their natural chromosomal environment, and international patent law is even more stringent than U.S. patent law in this regard. Most current methods for over-expression of a gene or protein involve the introduction into a cell of a vector containing a DNA encoding the protein to be over-expressed. Because such a vector contains isolated cDNA sequences that encode the protein, it would be covered by any patent claims to those sequences. In contrast, our methods for over-expression utilize ZFP TFs that target endogenous genes as they exist in the chromosome. As a result, our gene regulation methods do not require the use of isolated cDNA sequences encoding the protein to be over-expressed and, our counsel has advised us, do not infringe patent claims to such sequences. Notwithstanding this advice, we realize that others could take a contrary position that could result in litigation. While we believe that we would prevail in any such litigation, the uncertainties involved in litigation generally make it impossible to provide assurance as to the ultimate outcome of such matters. See "*Risk Factors—Because it is difficult and costly to protect our proprietary rights, and third parties have filed patent applications that are similar to ours, we cannot ensure the proprietary protection of our technologies and products."*

The patent positions of pharmaceutical and biotechnology firms, including our patent position, are uncertain and involve complex legal and factual questions for which important legal tenets are largely unresolved and are subject to interpretation and refinement by the court system. Patent applications may not result in the issuance of patents and the coverage claimed in a patent application may be significantly reduced before a patent is issued. Although we have filed for patents on some aspects of our technology, we cannot provide assurances that patents will be issued as a result of these pending applications or that any patent that has been or may be issued will be upheld. The laws of some foreign countries may not protect our proprietary rights to the same extent as do the laws of the United States. For example, our issued European patents EP2171052 and EP2527435 have been opposed in Europe. Our EP2281050 case was revoked during Opposition in November 2016. Similarly, EP2171052 and EP2527435 underwent Opposition hearings in early 2017. Although these cases emerged from the Opposition hearings, the opponent filed appeals that are currently underway, and we do not know what the outcome of these procedures will be. The claims of these patents may be amended such that claim scope is reduced or the patents may be revoked as a result of these procedures.

In the future, third parties may assert patent, copyright trademark, and other intellectual property rights to technologies that are important to our business. Any claims asserting that our products infringe or may infringe proprietary rights of third parties, if determined adversely to us, could significantly harm our business. See "*Risk Factors—Because it is difficult and costly to protect our proprietary rights, and third parties have filed patent applications that are similar to ours, we cannot ensure the proprietary protection of our technologies and products*."

**COMPETITION**

We, and our licensed partners, are the leaders in the research, development, and commercialization of DNA binding proteins for genome editing and regulation of gene expression. We are aware of several companies focused on other methods for editing genes and regulating gene expression and a limited number of commercial and academic groups pursuing the development of ZFP gene regulation and genome editing technology. The field of applied gene regulation and genome editing is highly competitive and we expect competition to persist and intensify in the future from a number of different sources, including pharmaceutical and biotechnology companies; academic and research institutions; and government agencies that will seek to develop ZFPs as well as technologies that will compete with our ZFP technology platform, such as TALE proteins and the CRISPR/Cas9 system.

Accordingly, our competitors may succeed in obtaining patent protection, receiving FDA approval, or commercializing competitive products before us. If we commence commercial product sales, we may be competing against companies with greater marketing and manufacturing capabilities, areas in which we have limited or no experience. In addition, any product candidate that we successfully develop may compete with existing products that have long histories of safe and effective use.

Although we are in the clinical development phase of operations and have no current therapeutic product sales, we believe the following companies, products and/or technologies may potentially be competitive with our technology or our products under development:

- Protein pharmaceuticals under development at pharmaceutical and biotechnology companies such as Pfizer, Baxter International Inc., Bayer AG, Novo Nordisk A/S, Genzyme Corp., Shire, BioMarin Pharmaceutical Inc., Biogen Inc., Acceleron Pharma Inc. and numerous other pharmaceutical and biotechnology firms.
- Gene therapy companies developing gene-based products in clinical trials. uniQure N.V.'s product for lipoprotein lipase deficiency and GlaxoSmithKline plc's, or GSK, product for severe combined immunodeficiency due to adenosine deaminase deficiency are approved in Europe. No other gene therapy products have yet been approved. Our competitors in this category may include, but not be limited to, uniQure N.V., BioMarin Pharmaceutical Inc., bluebird bio, Inc., REGENXBIO Inc., Spark Therapeutics, Inc., Dimension Therapeutics, Inc., Voyager Therapeutics, Inc., Shire, Pfizer, and GSK.
- Cell therapy companies developing cell-based products. Our competitors in this category may include Novartis AG, Adaptimmune Therapeutics PLC, bluebird bio, Inc., Cellectis S.A., Juno Therapeutics, Inc., Kite, Atara Biotherapeutics, Inc., and Iovance Biotechnologies, Inc..
- Nuclease technologies under development for therapeutic applications of genome modification including companies such as Editas Medicine, Inc., CRISPR Therapeutics AG, Caribou Biosciences, Inc. and Intellia Therapeutics, Inc. developing the CRISPR/Cas9 system, Cellectis S.A. developing TALE nucleases and meganucleases, bluebird bio, Inc. developing Homing Endonucleases and MegaTALs and Precision BioSciences, Inc. developing meganucleases.
- Antisense therapeutics and RNA interference technology, including RNAi and microRNA, which are technologies that may compete with us in the development of novel therapeutic products acting through the regulation of gene expression. These technologies are being developed by several companies including Alnylam Pharmaceuticals, Inc., Ionis Pharmaceuticals, Inc., Genzyme Corp. and Regulus Therapeutics Inc.

- Small molecules in development from both in-house drug discovery programs of pharmaceutical companies such as Pfizer, Inc., GSK, Novartis AG and Merck & Co., Inc., as well as from biotechnology companies with expertise and capabilities in small molecule discovery and development such as Gilead, Genzyme Corp. and Global Blood Therapeutics, Inc., which has a small molecule product in development for SCD.
- Monoclonal antibody companies and product candidates from certain biotechnology firms such as Genentech, Inc. and Amgen Inc.

We expect to face intense competition from other companies for collaborative arrangements with pharmaceutical and biotechnology companies for establishing relationships with academic and research institutions, for licenses to proprietary technology and for subjects in our clinical trials of treatments for rare diseases. These competitors, either alone or with their collaborative partners, may succeed in developing technologies or products that are more effective or less costly than ours.

Our ability to compete successfully will depend, in part, on our ability to:

- develop safe, efficacious and commercially attractive proprietary products;
- obtain access to gene transfer technology on commercially reasonable terms;
- obtain required regulatory approvals;
- attract and retain qualified scientific and product development personnel;
- enter into collaborative and strategic partnerships with others, including our competitors, to develop our technology and product candidates;
- obtain and enforce patents, licenses or other proprietary protection for our products and technologies;
- formulate, manufacture, market and sell any product that we develop;
- develop and maintain products that reach the market first and are technologically superior to or are of lower cost than other products in the market; and
- recruit subjects into our clinical trials in a timely fashion.

**MANUFACTURING**

We rely on contract manufacturing organizations, or CMOs, to produce our preclinical and clinical product candidates in accordance with FDA and EMA mandated regulations, also known as current good manufacturing practices, or cGMPs. We employ a technical operations staff in the areas of process development, analytical development, quality control, quality assurance, project management, and manufacturing to facilitate appropriate oversight of our CMOs, support of our regulatory filings and execution of clinical trials. In 2017, we expanded our services agreement with Brammer Bio MA, LLC, or Brammer, to provide dedicated capacity to supply our preclinical and clinical programs. Additionally, we plan to build a cGMP manufacturing facility at our new corporate headquarters in Brisbane, CA. This facility will be designed to manufacture of Phase 1/2 clinical trial supplies for our pipeline programs. We believe this balanced approach to manufacturing, investing in internal capacity/capabilities while strengthening our commitment to external capacity, will enable us to meet our anticipated pipeline needs.

We currently leverage two distinct manufacturing platforms: AAV vector production for our genome editing and gene therapy product candidates and HSPC modification for our cell therapy product candidates. We use a commercial scale baculovirus manufacturing platform to manufacture AAV vectors for genome editing and gene therapy, with each AAV vector packaging a different transgene specific to the target indication or ZFN. The manufacturing process for our HSPC cell therapy product candidates utilizes the patient's own HSPCs. These HSPCs are transfected using mRNA to produce ZFNs that target specific DNA sites, resulting in modified HSPCs.

**GOVERNMENT REGULATION**

In the United States, the FDA regulates biologic products including gene therapy products under the Federal Food, Drug, and Cosmetic Act, or the FDCA, the Public Health Service Act, or the PHSA, and regulations and guidance implementing these laws. The FDCA, PHSA and their corresponding regulations govern, among other things, the testing, manufacturing, safety, efficacy, labeling, packaging, storage, record keeping, distribution, reporting, advertising and other promotional practices involving biologic products. Applications to the FDA are required before conducting human clinical testing of biologic products. Additionally, each clinical trial protocol for a gene therapy product candidate is reviewed by the FDA and, in limited instances the National Institutes of Health, or the NIH, through its Recombinant DNA Advisory Committee, or RAC. FDA approval also must be obtained before marketing of biologic products. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and

foreign statutes and regulations require the expenditure of substantial time and financial resources and we may not be able to obtain the required regulatory approvals.

***U.S. Biologic Products Development Process***

Our product candidates must be approved by the FDA before they may be legally marketed in the United States. The process required by the FDA before a biologic product candidate may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests and *in vivo* studies in accordance with the FDA's current Good Laboratory Practice, or GLP, regulations and applicable requirements for the humane use of laboratory animals or other applicable regulations;
- submission to the FDA of an application for an IND exemption, which allows human clinical trials to begin unless FDA objects within 30 days;
- approval by an independent institutional review board, or IRB, reviewing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials according to the FDA's GCP regulations, and any additional requirements for the protection of human research subjects and their health information, to establish the safety and efficacy of the proposed biologic product candidate for its intended use;
- preparation and submission to the FDA of a biologics license application ("BLA") for marketing approval that includes substantial evidence of safety, purity and potency from results of nonclinical testing and clinical trials;
- review of the product by an FDA advisory committee, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities where the biologic product candidate is produced to assess compliance with cGMP requirements and to assure that the facilities, methods and controls are adequate to preserve the biologic product candidate's identity, safety, strength, quality, potency and purity;
- potential FDA audit of the nonclinical and clinical trial sites that generated the data in support of the BLA; and
- payment of user fees and FDA review and approval, or licensure, of the BLA.

Before testing any biologic product candidate in humans, including a gene therapy product candidate, the product candidate must undergo preclinical testing. Preclinical tests, also referred to as nonclinical studies, include laboratory evaluations of product chemistry, toxicity and formulation, as well as in vivo studies to assess the potential safety and activity of the product candidate and to establish a rationale for therapeutic use. The conduct of the preclinical tests must comply with federal regulations and requirements including GLPs.

Concurrent with clinical trials, companies usually must complete some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity, and must also develop additional information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing the drug in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the drug candidate and, among other things, the manufacturer must develop methods for testing the identity, strength, quality and purity of the final drug product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf life.

If a gene therapy trial is conducted at, or sponsored by, institutions receiving NIH funding for recombinant DNA research, prior to the submission of an IND to the FDA, a protocol and related documents must be submitted to, and the study registered with, the NIH Office of Biotechnology Activities, or the OBA, pursuant to the NIH Guidelines for Research Involving Recombinant DNA Molecules, or the NIH Guidelines. Compliance with the NIH Guidelines is mandatory for investigators at institutions receiving NIH funds for research involving recombinant DNA. However, many companies and other institutions, not otherwise subject to the NIH Guidelines, voluntarily follow them. The NIH is responsible for convening the RAC that discusses protocols that raise novel or particularly important scientific, safety or ethical considerations at one of its quarterly public meetings. The OBA will notify the FDA of the RAC's decision regarding the necessity for full public review of a gene therapy protocol. RAC proceedings and reports are posted to the OBA website and may be accessed by the public.

The clinical trial sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. Some preclinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. With gene therapy protocols, if the FDA allows the IND to proceed, but the RAC decides that full public review of the protocol is warranted, the FDA will request at the completion of its IND review that sponsors delay initiation of the protocol until after completion of the RAC review process. The FDA also may impose clinical holds on a biologic product candidate at any time before or during clinical trials due to safety concerns or non-compliance. If the FDA imposes a clinical hold, trials may not recommence without FDA authorization and then only under terms authorized by the FDA. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical studies to begin, or that, once begun, issues will not arise that suspend or terminate such studies.

***Human Clinical Trials Under an IND***

Clinical trials involve the administration of the biologic product candidate to healthy volunteers or patients under the supervision of qualified investigators which generally are physicians not employed by, or under, the control of the trial sponsor. Clinical trials are conducted under written study protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria and the parameters to be used to monitor subject safety, including stopping rules that assure a clinical trial will be stopped if certain adverse events should occur. Each protocol and any amendments to the protocol must be submitted to the FDA as part of the IND. Clinical trials must be conducted and monitored in accordance with the FDA's regulations comprising the GCP requirements, including the requirement that all research subjects provide informed consent.

Further, each clinical trial must be reviewed and approved by an IRB at or servicing each institution at which the clinical trial will be conducted. An IRB is charged with protecting the welfare and rights of trial participants and considers items such as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the form and content of the informed consent that must be signed by each clinical trial subject, or their legal representative, reviews and approves the study protocol, and must monitor the clinical trial until completed. Clinical trials involving recombinant DNA also must be reviewed by an institutional biosafety committee, or IBC, a local institutional committee that reviews and oversees basic and clinical research that utilizes recombinant DNA at that institution. The IBC assesses the safety of the research and identifies any potential risk to public health or the environment.

Human clinical trials typically are conducted in three sequential phases that may overlap or be combined:

- *Phase 1.* The biologic product candidate initially is introduced into a small number of human subjects and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early understanding of its effectiveness. Phase 1 clinical trials of gene therapies are typically conducted in patients rather than healthy volunteers.

- *Phase 2.* The biologic product candidate is evaluated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product candidate for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule.

- *Phase 3.* Phase 3 clinical trials are commonly referred to as "pivotal" studies, which typically denotes a study which presents the data that the FDA or other relevant regulatory agency will use to determine whether or not to approve a biologic product. In Phase 3 studies, the biologic product candidate is administered to an expanded patient population, generally at multiple geographically dispersed clinical trial sites in adequate and well-controlled clinical trials to generate sufficient data to statistically confirm the potency and safety of the product for approval. These clinical trials are intended to establish the overall risk/benefit ratio of the product candidate and provide an adequate basis for product labeling.

Post-approval clinical trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial approval. These clinical trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long-term safety follow-up.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data and clinical trial investigators. Annual progress reports detailing the results of the clinical trials must be submitted to the FDA.

Written IND safety reports must be promptly submitted to the FDA, the NIH and the investigators for: serious and unexpected adverse events; any findings from other trials, in vivo laboratory tests or in vitro testing that suggest a significant risk for

human subjects; or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information.

The FDA or the sponsor or its data safety monitoring board may suspend a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the biologic product candidate has been associated with unexpected serious harm to patients.

FDA usually recommends that sponsors observe subjects for potential gene therapy-related delayed adverse events for a 15-year period, including a minimum of five years of annual examinations followed by 10 years of annual queries, either in person or by questionnaire.

***Compliance with cGMP Requirements***

Manufacturers of biologics must comply with applicable cGMP regulations, including quality control and quality assurance and maintenance of records and documentation. Manufacturers and others involved in the manufacture and distribution of such products also must register their establishments with the FDA and certain state agencies. Both domestic and foreign manufacturing establishments must register and provide additional information to the FDA upon their initial participation in the manufacturing process. Establishments may be subject to periodic, unannounced inspections by government authorities to ensure compliance with cGMP requirements and other laws. Discovery of problems may result in a government entity placing restrictions on a product, manufacturer or holder of an approved BLA, and may extend to requiring withdrawal of the product from the market. The FDA will not approve a BLA unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specification.

Concurrent with clinical trials, companies usually complete additional preclinical studies and must also develop additional information about the physical characteristics of the biologic product candidate as well as finalize a process for manufacturing the product candidate in commercial quantities in accordance with cGMP requirements. To help reduce the risk of the introduction of adventitious agents or of causing other adverse events with the use of biologic products, the PHSA emphasizes the importance of manufacturing control for products whose attributes cannot be precisely defined. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other requirements, the sponsor must develop methods for testing the identity, strength, quality, potency and purity of the final biologic product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the biologic product candidate does not undergo unacceptable deterioration over its shelf life.

***U.S. Review and Approval Processes***

The results of the preclinical tests and clinical trials, together with detailed information relating to the product's CMC and proposed labeling, among other things, are submitted to the FDA as part of a BLA requesting approval to market the product for one or more indications.

Under the Prescription Drug User Fee Act, or PDUFA, as amended, each BLA must be accompanied by a significant user fee. The FDA adjusts the PDUFA user fees on an annual basis. The PDUFA also imposes an annual program fee for approved biologics. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business.

The FDA reviews a BLA within 60 days of submission to determine if it is substantially complete before the agency accepts it for filing. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In that event, the BLA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth, substantive review of the BLA.

The FDA reviews the BLA to determine, among other things, whether the proposed product candidate is safe and potent, or effective, for its intended use, has an acceptable purity profile and whether the product candidate is being manufactured in accordance with cGMP to assure and preserve the product candidate's identity, safety, strength, quality, potency and purity. The FDA may refer applications for novel biologic products or biologic products that present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. During the product approval process, the FDA also will

determine whether a risk evaluation and mitigation strategy, or REMS, is necessary to assure the safe use of the product candidate. REMS use risk minimization strategies beyond the professional labeling to ensure that the benefits of the product outweigh the potential risks. To determine whether a REMS is needed, the FDA will consider the size of the population likely to use the product, seriousness of the disease, expected benefit of the product, expected duration of treatment, seriousness of known or potential adverse events, and whether the product is a new molecular entity. A REMS could include medication guides, physician communication plans and elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. If the FDA concludes a REMS is needed, the sponsor of the BLA must submit a proposed REMS; the FDA will not approve the BLA without a REMS, if required.

Before approving a BLA, the FDA will inspect the facilities at which the product candidate is manufactured. The FDA will not approve the product candidate unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product candidate within required specifications. Additionally, before approving a BLA, the FDA typically will inspect one or more clinical sites to assure that the clinical trials were conducted in compliance with IND trial requirements and GCP requirements.

On the basis of the BLA and accompanying information, including the results of the inspection of the manufacturing facilities, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the biologic product with specific prescribing information for specific indications. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the BLA, the FDA will issue an approval letter.

If a product candidate receives regulatory approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. The FDA may impose restrictions and conditions on product distribution, prescribing or dispensing in the form of a REMS, or otherwise limit the scope of any approval. In addition, the FDA may require post-marketing clinical trials, sometimes referred to as Phase 4 clinical trials, designed to further assess a biologic product's safety and effectiveness, and testing and surveillance programs to monitor the safety of approved products that have been commercialized.

The FDA has agreed to specified performance goals in the review of BLAs under the PDUFA. One such goal is to review standard BLAs in 10 months after the FDA accepts the BLA for filing, and priority BLAs in six months, whereupon a review decision is to be made. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs and its review goals are subject to change from time to time. The review process and the PDUFA goal date may be extended by three months if the FDA requests or the BLA sponsor otherwise provides additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date.

***Post-approval Requirements***

Rigorous and extensive FDA regulation of biologic products continues after approval, particularly with respect to cGMP requirements. Manufacturers are required to comply with applicable requirements in the cGMP regulations, including quality control and quality assurance and maintenance of records and documentation. Other post-approval requirements applicable to biologic products include reporting of cGMP deviations that may affect the identity, potency, purity and overall safety of a distributed product, record-keeping requirements, reporting of adverse effects, reporting updated safety and efficacy information and complying with electronic record and signature requirements. After a BLA is approved, the product also may be subject to official lot release. If the product is subject to official release by the FDA, the manufacturer submits samples of each lot of product to the FDA, together with a release protocol, showing a summary of the history of manufacture of the lot and the results of all tests performed on the lot. The FDA also may perform certain confirmatory tests on lots of some products before releasing the lots for distribution. In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency and effectiveness of biologic products.

A sponsor also must comply with the FDA's advertising and promotion requirements, such as the prohibition on promoting products for uses or in patient populations that are not described in the product's approved labeling (known as "off-label use"). Discovery of previously unknown problems or the failure to comply with the applicable regulatory requirements may result in restrictions on the marketing of a product or withdrawal of the product from the market as well as possible civil or criminal sanctions. In addition, changes to the manufacturing process or facility generally require prior FDA approval before being implemented and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval.

***Additional Regulation***

Although we currently do not have any products on the market, we may be subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which we conduct our business. Such laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, privacy and security and physician sunshine laws and regulations, many of which may become more applicable if our product candidates are approved and we begin commercialization. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and imprisonment, and additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, any of which could adversely affect our ability to operate our business and our financial results. See Risk Factors—"*Our relationships with customers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.*"

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we obtain regulatory approval, particularly for novel products. In both domestic and foreign markets, sales and reimbursement of any approved products will depend, in part, on the extent to which third-party payors, such as government health programs, commercial insurance and managed healthcare organizations provide coverage, and establish adequate reimbursement levels, for such products. Third-party payors are increasingly challenging the prices charged for medical products and services and imposing controls to manage costs. Third-party payors may limit coverage to specific products on an approved list, or also known as a formulary, which might not include all of the FDA-approved products for a particular indication. Additionally, we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost-effectiveness of our products. If third-party payors do not consider our products to be cost-effective compared to other therapies, the payors may not cover our products after approved as a benefit under their plans or, if they do, the level of reimbursement may not be sufficient to allow us to sell our products on a profitable basis. See Risk Factors—"*Even if we are able to commercialize our product candidates, the products may not receive coverage and adequate reimbursement from third-party payors in the United States and in other countries in which we seek to commercialize our products, which could harm our business*."

**EMPLOYEES**

As of February 15, 2018, we had 182 full-time employees, all of whom are located at our headquarters in Richmond, California. None of our employees are represented by a collective bargaining organization or covered by a collective bargaining agreement, nor have we experienced work stoppages. We believe that our relations with our employees are good.

**CORPORATE INFORMATION**

We were incorporated in June 1995 in the state of Delaware and in January 2017, we changed our name from "Sangamo BioSciences, Inc." to "Sangamo Therapeutics, Inc." Our website is http://www.sangamo.com. We make available free of charge, on or through our internet site, our annual, quarterly, and current reports and any amendments to those reports filed or furnished pursuant to Section 13(a) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained in our website is not part of, nor incorporated by reference into, this report.

**ITEM 1A – RISK FACTORS**

An investment in our common stock involves significant risk. This Form 10-K contains forward-looking information based on our current expectations. Because our actual results may differ materially from any forward-looking statements made by or on our behalf, this section includes a discussion of important factors that could affect our actual future results, including, but not limited to, our revenues, expenses, net loss and net loss per share. You should carefully consider the information described in the following risk factors, together with the other information appearing elsewhere in this report, before making an investment decision regarding our common stock.

**Risks Relating to Development, Commercialization and Regulatory Approval of our Products and Technology**

***Our success depends substantially on the results of clinical trials of our lead therapeutic programs, and we may not be able to demonstrate safety and efficacy of our product candidates.***

We do not have any products that have gained regulatory approval. We have initiated Phase 1/2 clinical trials evaluating product candidates for the treatment of hemophilia A (SB-525), hemophilia B (SB-FIX), MPS I (SB-318) and MPS II (SB-913). Our business is substantially dependent on our ability to obtain regulatory approval for, and, if approved, to successfully commercialize these product candidates in a timely manner. Our failure to enroll sufficient patients to conduct the trials, demonstrate safety or obtain positive clinical trial results, or our inability to meet the expected timeline of clinical trials or release of data for these programs would have a material adverse effect on our business operations and financial conditions, which may cause a significant decline in our stock price.

Our ability to conduct clinical trials successfully and on a timely basis for these programs is subject to a number of additional risks, including but are not limited to the following:

- disagreement with the design or implementation of our clinical trials;
- the ability to identify and recruit sufficient number of acceptable patients to complete enrollment of trials;
- failure to demonstrate that a product candidate is safe and effective for its proposed indication;
- the occurrence of unexpected adverse events or toxicity;
- disagreement with the FDA on the interpretation of data from preclinical studies or our clinical trial results;
- failure of clinical trials to meet the level of statistical significance required for approval;
- the insufficiency of data collected from clinical trials of our product candidates to support the submission and filing of a BLA or other submission or to obtain regulatory approval;
- changes in the approval policies or regulations that render our preclinical and clinical data insufficient for approval;
- failure to obtain approval of our manufacturing processes or facilities of third-party manufacturers with whom we contract for clinical and commercial supplies or our own manufacturing facility;
- defects in the preparation and manufacturing of our product candidates;
- failure by third parties, including vendors, manufacturers and clinical trial organizations, to provide timely and adequate supplies and services;
- development of similar gene therapies by our competitors;
- unexpected costs and expenses and lack of sufficient funding for these programs; and
- loss of licenses to critical intellectual properties.

We have not yet reached agreement with regulatory authorities on the development pathway for our product candidates. As a result, we have not yet determined what endpoints would support approval for certain of our programs. Due to the novelty of certain programs, such as SB-318 and SB-913, the endpoints needed to support regulatory approvals may be different than originally anticipated. Even if we are able to complete phase 1/2 trials for these programs successfully, we will likely be required to conduct additional clinical trials with larger patient populations, before obtaining the necessary regulatory approval to commercialize our products. However, there is no guarantee that the positive results achieved in earlier trials are indicative of long-term efficacy in late stage clinical trials. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in

late stage clinical trials even after achieving promising results in earlier-stage clinical trials. If a larger population of patients does not experience positive results, or if these results are not reproducible, our products may not receive approval from the FDA, which could have a material adverse effect on our business that would cause our stock price to decline significantly.

Even if a product candidate were to successfully obtain approval from the FDA and comparable foreign regulatory authorities, any approval might contain significant limitations related to use restrictions for specified age groups, warnings, precautions or contraindications, or may be subject to burdensome post-approval study or risk management requirements. If we are unable to obtain regulatory approval for one of our product candidates in one or more jurisdictions, or any approval contains significant limitations, we may not be able to obtain sufficient funding to continue the development of that product or generate revenues attributable to that product candidate. Also, any regulatory approval of our current or future product candidates, once obtained, may be withdrawn.

***Success in preclinical studies or early clinical trials may not be indicative of results obtained in later trials.***

Results from preclinical studies or previous clinical trials are not necessarily predictive of future clinical trial results, and interim results of a clinical trial are not necessarily indicative of final results. Our product candidates may fail to show the desired safety and efficacy in clinical development despite demonstrating positive results in preclinical studies or having successfully advanced through initial clinical trials or preliminary stages of clinical trials.

While we have achieved positive results in preclinical studies of our product candidates for hemophilia A (SB-525), hemophilia B (SB-FIX), MPS I (SB-318) and MPS II (SB-913), Phase 1/2 clinical trials have only recently begun and there is no guarantee that we can achieve positive safety and efficacy results. Furthermore, all four programs are novel *in-vivo* gene therapy or genome editing therapies that utilize AAV to deliver therapeutic levels of ZFN into the patient's blood stream. The AAV delivery system has not been validated in human clinical trials previously, and if such delivery system does not meet the safety criteria or cannot produce the desirable efficacy results we expect, we may be forced to suspend or terminate the affected program.

There is a high failure rate for drugs, biologic products and cell therapies proceeding through clinical trials. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials even after achieving promising results in preclinical testing and earlier-stage clinical trials. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. In addition, we may experience regulatory delays or rejections as a result of many factors, including due to changes in regulatory policy during the period of our product candidate development. Any such delays could materially and adversely affect our business, financial condition, results of operations and prospects.

***Our potential products are subject to a lengthy and uncertain regulatory approval process.***

The FDA must approve any human therapeutic product before it can be marketed in the United States. The process for receiving regulatory approval is long and uncertain, and a potential product may not withstand the rigors of testing under the regulatory approval processes.

Before commencing clinical trials in humans, we must submit an Investigational New Drug, or IND, application to the FDA. The FDA has 30 days to comment on the application, and if the agency has no comments, we or our commercial partner may begin clinical trials. While we have stated our intention to file additional IND applications in the future, this is only a statement of intent, and we may not be able to do so because the associated product candidates may not meet the necessary preclinical requirements. In addition, there can be no assurance that, once filed, an IND application will result in the actual initiation of clinical trials or that we will be able to meet our targeted timeline for the initiation of clinical trials. Clinical trials are subject to oversight by institutional review boards and the FDA. In addition, our proposed clinical studies may require review from the Recombinant DNA Advisory Committee, or RAC, which is the advisory board to the NIH focusing on clinical trials involving gene transfer.

Clinical trials:

- must be conducted in conformance with the FDA's good clinical practices, within the guidelines of the International Council for Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use, or ICH, and other applicable regulations;
- must meet requirements for Institutional Review Board, or IRB, oversight;
- must follow Institutional Biosafety Committee, or IBC, and NIH RAC guidelines where applicable;
- must meet requirements for informed consent;
- are subject to continuing FDA or similar foreign government oversight;

- may require oversight by a Data Monitoring Committee, or DMC;
- may require large numbers of test subjects; and
- may be suspended by a commercial partner, the FDA, or us at any time if it is believed that the subjects participating in these trials are being exposed to unacceptable health risks or if the FDA finds deficiencies in the IND application or the conduct of these trials.

If we are not able to obtain the necessary regulatory approval to commercialize our products of if such approval is delayed or suspended, it would have an adverse effect on our business operations and trading price of our common stock.

***We may encounter difficulties that may delay, suspend or scale back our efforts to advance additional early research programs through preclinical development and IND application filings and into clinical development.***

We intend to advance early research programs through preclinical development and to file new IND applications for human clinical trials evaluating the preclinical candidates in our pipeline. The preparation and submission of IND applications requires us to conduct rigorous and time-consuming preclinical testing, studies, and prepare documentation relating to, among other things, the toxicity, safety, manufacturing, chemistry and clinical protocol of our product candidates. We may experience unforeseen difficulties that could delay or otherwise prevent us from executing this strategy successfully. For example, we may encounter problems in the manufacturing of our products and fail to demonstrate consistency in the formulation of the drug. Our preclinical tests may produce negative or inconclusive results, which may lead us to decide, or regulators may require us, to conduct additional preclinical testing. If we cannot obtain positive results in preclinical testing, we may decide to abandon the projects altogether. In addition, our ability to complete and file certain IND applications depends on the support of our partners and the timely performance of their obligations under relevant collaboration agreements. If our partners are not able to perform such obligations or if they choose to slow down or delay the progress, we may not be able to prepare and file the intended IND applications on a timely basis or at all. Furthermore, the filing of several IND applications involves significant cost and labor, and we may not have sufficient resources and personnel to complete the filing of all intended IND applications, which may force us to scale back the number of IND applications or forego potential IND applications that we believe are promising. Any delay, suspension or reduction of our efforts to pursue our preclinical and IND strategy could have a material adverse effect on our business and cause our stock price to decline.

***We may not successfully identify, acquire, develop or commercialize new potential product candidates.***

Part of our business strategy is to expand our product candidate pipeline by identifying and validating new product candidates, which we may develop ourselves, in-license or otherwise acquire from others. In addition, in the event that our existing product candidates do not receive regulatory approval or are not successfully commercialized, then the success of our business will depend on our ability to expand our product pipeline through in-licensing or other acquisitions. We may be unable to identify relevant product candidates. If we do identify such product candidates, we may be unable to reach acceptable terms with any third party from which we desire to in-license or acquire them.

***We may encounter substantial delays in our clinical trials or we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.***

Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must conduct extensive clinical trials to demonstrate the safety and efficacy of the product candidates. Clinical testing is expensive, time consuming and uncertain as to outcome. We cannot guarantee that any clinical trials will be conducted as planned or completed on schedule, if at all. A failure of one or more clinical trials can occur at any stage of testing. Events that may prevent successful or timely completion of clinical development include:

- delays in reaching a consensus with regulatory authorities on trial design;
- delays in reaching agreement on acceptable terms with prospective CROs and clinical trial sites;
- delays in opening clinical trial sites or obtaining required IRB or independent ethics committee approval at each clinical trial site;
- delays in recruiting suitable subjects to participate in our clinical trials;
- imposition of a clinical hold by regulatory authorities as a result of a serious adverse event or after an inspection of our clinical trial operations or trial sites;
- failure by us, any CROs we engage or any other third parties to adhere to clinical trial requirements;

- failure to perform in accordance with FDA good clinical practices, or GCP, or applicable regulatory guidelines in the European Union and other countries;
- delays in the testing, validation, manufacturing and delivery of our product candidates to the clinical sites, including delays by third parties with whom we have contracted to perform certain of those functions;
- delays in having subjects complete participation in a trial or return for post-treatment follow-up;
- clinical trial sites or subjects dropping out of a trial;
- selection of clinical endpoints that require prolonged periods of clinical observation or analysis of the resulting data;
- occurrence of serious adverse events associated with the product candidate that are viewed to outweigh its potential benefits;
- occurrence of serious adverse events in trials of the same class of agents conducted by other sponsors; or
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenues from product sales, regulatory and commercialization milestones and royalties. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional studies to bridge our modified product candidates to earlier versions. Clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business, financial condition, results of operations and prospects.

Additionally, if the results of our clinical trials are inconclusive or if there are safety concerns or serious adverse events associated with our product candidates, we may:

- be delayed in obtaining marketing approval for our product candidates, if at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to changes in the way the product is administered;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw, or suspend, their approval of the product or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy;
- be subject to the addition of labeling statements, such as warnings or contraindications;
- be sued; or
- experience damage to our reputation.

***We may not be able to find acceptable patients or may experience delays in enrolling patients for our clinical trials, which could delay or prevent us from proceeding with clinical trials of our product candidates.***

Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. The timing of our clinical trials depends on our ability to recruit patients to participate as well as completion of required follow-up periods. For example, hemophilia trials often take longer to enroll due to the availability of existing treatments. We have been unable to enroll a patient in our hemophilia B clinical trial. If we are not able to enroll the necessary number of patients in a timely manner, we may not be able to complete the clinical trial. We may face similar challenges or delays in our other or future clinical trials. If patients are unwilling to participate in our gene therapy studies because of negative publicity from adverse events related to the biotechnology or gene therapy fields, competitive clinical trials for similar patient populations or for other reasons, the timeline for recruiting patients, conducting studies and obtaining regulatory approval of our product candidates may be delayed. These delays could result in increased costs, delays in advancing our product candidates, delays in testing the effectiveness of our product candidates or termination of the clinical trials altogether.

We may not be able to identify, recruit and enroll a sufficient number of patients, or those with required or desired characteristics, to complete our clinical trials in a timely manner. Patient enrollment and trial completion is affected by factors including:

- size of the patient population and process for identifying subjects;

- design of the trial protocol;
- eligibility and exclusion criteria;
- perceived risks and benefits of the product candidate under study;
- perceived risks and benefits of gene therapy-based approaches to treatment of diseases;
- availability of competing therapies and clinical trials;
- severity of the disease under investigation;
- availability of genetic testing for potential patients;
- proximity and availability of clinical trial sites for prospective subjects;
- ability to obtain and maintain subject consent;
- risk that enrolled subjects will drop out before completion of the trial;
- patient referral practices of physicians; and
- ability to monitor subjects adequately during and after treatment.

Our current product candidates are being developed to treat rare conditions. We plan to seek initial regulatory approvals in the United States and, subsequently, the European Union. We may not be able to initiate or continue clinical trials if we cannot enroll a sufficient number of eligible patients to participate in the clinical trials required by regulatory authorities. Our ability to successfully initiate, enroll and complete a clinical trial in any foreign country is subject to numerous risks unique to conducting business in foreign countries, including:

- difficulty in establishing or managing relationships with contract research organizations, or CROs, and physicians;
- different standards for the conduct of clinical trials;
- absence in some countries of established groups with sufficient regulatory expertise for review of gene therapy protocols;
- our inability to locate qualified local consultants, physicians and partners; and
- the potential burden of complying with a variety of foreign laws, medical standards and regulatory requirements, including the regulation of pharmaceutical and biotechnology products and treatment.

If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit or terminate ongoing or planned clinical trials, any of which would have an adverse effect on our business, financial condition, results of operations and prospects.

***Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial potential or result in significant negative consequences following any potential marketing approval.***

During the conduct of clinical trials, patients report changes in their health, including illnesses, injuries and discomforts, to their study doctor. Often, it is not possible to determine whether or not the product candidate being studied caused these conditions, particularly as many of the diseases we are studying have complex comorbidities. If clinical experience indicates that our product candidates have side effects or cause serious or life-threatening side effects, the development of the product candidate may fail or be delayed, or, if the product candidate has received regulatory approval, such approval may be revoked, which would severely harm our business, prospects, operating results and financial condition.

There have been several significant adverse side effects in gene therapy treatments in the past, including reported cases of leukemia and death seen in other trials using other genomic therapies. Gene therapy is still a relatively new approach to disease treatment and additional adverse side effects could develop. There also is the potential risk of significantly delayed adverse events following exposure to gene therapy products due to persistent biologic activity of the genetic material or other components of products used to carry the genetic material. Possible adverse side effects that could occur with treatment with gene therapy products include an immunologic reaction early after administration that, while not necessarily adverse to the patient’s health, could substantially limit the effectiveness of the treatment.

***As we cannot predict whether or when we will obtain regulatory approval to commercialize our product candidates, we cannot predict the timing of any future revenue from these product candidates.***

We cannot commercialize any of our products to generate revenue until the appropriate regulatory authorities have reviewed and approved the applications for the product candidates. We cannot ensure that the regulatory agencies will complete their review processes in a timely manner or that we will obtain regulatory approval for any product candidate that we or our collaborators develop. Satisfaction of regulatory requirements typically takes many years, is dependent upon the type, complexity and novelty of the product and requires the expenditure of substantial resources. Regulatory approval processes outside the United States include all of the risks associated with the FDA approval process. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review.

***We have limited experience in conducting advanced clinical trials.***

We have initiated Phase 1/2 clinical trials evaluating product candidates for hemophilia A (SB-525), hemophilia B (SB-FIX), MPS I (SB-318) and MPS II (SB-913). For potential marketing application approval, additional clinical testing will be required, which involves significantly greater resources, commitments and expertise. Therefore, we may be required to scale up our operations and enter into collaborative relationships with pharmaceutical companies that could assume responsibility for late-stage development and commercialization.

We have limited experience in conducting advanced clinical trials and may not possess the necessary resources and expertise to complete such trials. We have entered into a collaborative agreements to provide funding and assistance in the development of certain product candidates through the clinical trial process. However, there is no guarantee that we will be able to enter into future collaborative relationships with third parties that can provide us with the funding and expertise for later stage trials.

***We may be unable to obtain additional orphan drug designations or orphan drug exclusivity for any product. If our competitors are able to obtain orphan drug exclusivity for products that constitute the same drug and treat the same indications as our product candidates, we may not be able to have competing products approved by the applicable regulatory authority for a significant period of time.***

Regulatory authorities in some jurisdictions, including the United States and the European Union, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act of 1983, the FDA may designate a product candidate as an Orphan Drug if it is intended to treat a rare disease or condition, which is generally defined as having a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. In the European Union, the EMA's Committee for Orphan Medicinal Products grants such designation to promote the development of products that are intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition affecting not more than five in 10,000 persons in the European Union. Additionally, orphan designation is granted for products intended for the diagnosis, prevention or treatment of a life-threatening, seriously debilitating or serious and chronic condition and when, without incentives, it is unlikely that sales of the drug in the European Union would be sufficient to justify the necessary investment in developing the drug or biologic product.

Our four most advanced product candidates, SB-525, SB-FIX, SB-318 and SB-913 have all been granted Orphan Drug Designation by the FDA, and SB-525 and SB-318 and SB-913 have also been designated Orphan Medicinal Products by the EMA. If we request such designation for our other current or future product candidates, there can be no assurances that the FDA or the EMA will grant any of our product candidates such designation. Additionally, such designation does not guarantee that any regulatory agency will accelerate regulatory review of, or ultimately approve, that product candidate, nor does it limit the ability of any regulatory agency to grant such designation to product candidates of other companies that treat the same indications as our product candidates prior to our product candidates receiving exclusive marketing approval.

Generally, if a product candidate with an orphan drug designation receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the EMA from approving another marketing application for a product that constitutes the same drug treating the same indication for that marketing exclusivity period, except in limited circumstances. If another sponsor receives such approval before we do (regardless of our orphan drug designation), we will be precluded from receiving marketing approval for our product for the applicable exclusivity period. The applicable period is seven years in the United States and 10 years in the European Union. The exclusivity period in the United States can be extended by six months if the BLA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The exclusivity period in the European Union can be reduced to six years if a product no longer meets the criteria for orphan drug designation or if the product is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug

exclusivity may be revoked if any regulatory agency determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of patients with the rare disease or condition.

Even if we obtain orphan drug exclusivity for a product candidate, that exclusivity may not effectively protect the product candidate from competition because different drugs can be approved for the same condition. In the United States, even after an orphan drug is approved, the FDA may subsequently approve another drug for the same condition if the FDA concludes that the latter drug is not the same drug or is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care. In the European Union, marketing authorization may be granted to a similar medicinal product for the same orphan indication if:

- the second applicant can establish in its application that its medicinal product, although similar to the orphan medicinal product already authorized, is safer, more effective or otherwise clinically superior;
- the holder of the marketing authorization for the original orphan medicinal product consents to a second orphan medicinal product application; or
- the holder of the marketing authorization for the original orphan medicinal product cannot supply sufficient quantities of orphan medicinal product.

***Commercialization of our technologies will depend, in part, on strategic partnering with other companies. If we are not able to find partners in the future or if our partners do not diligently pursue product development efforts, we may not be able to develop our technologies or products, which could slow our growth and decrease the value of our stock.***

We expect to rely, to some extent, on our strategic partners to provide funding in support of our research and to perform independent research and preclinical and clinical testing. Our technology is broad-based, and we do not currently possess the resources necessary to fully develop and commercialize potential products that may result from our technologies or the resources or capabilities to complete the lengthy marketing approval processes that may be required for the products. Therefore, we plan to rely on strategic partnerships to help us develop and commercialize our products. We have entered into a collaborative agreements to provide funding and assistance in the development of certain product candidates through the clinical trial process. For example, we have an agreement with Kite for potential engineered cell therapies for cancer, two separate agreements with Pfizer, one for SB-525 for hemophilia A, and another for ALS/FTLD, and an agreement with Bioverativ for our beta-thalassemia and SCD product candidates.

If we are unable to find additional partners or if the partners we are unable or unwilling to advance our programs, or if they do not diligently pursue product approval, this may slow our progress and adversely affect our ability to generate revenues. In addition, our partners may sublicense or abandon development programs or we may have disagreements or disputes with our partners, which would cause associated product development to slow or cease. In addition, the business or operations of our partners may change significantly through restructuring, acquisition or other strategic transactions or decisions that may negatively impact their ability to advance our programs.

There can be no assurance that we will be able to establish further strategic collaborations for our products. We may require significant time to secure collaborations or partners because we need to effectively market the benefits of our technology to these future collaborators and partners, which may direct the attention and resources of our research and development personnel and management away from our primary business operations. Further, each collaboration or partnering arrangement will involve the negotiation of terms that may be unique to each collaborator or partner. These business development efforts may not result in a collaboration or partnership.

The loss of partnering agreements may delay or terminate the potential development or commercialization of products we may derive from our technologies, but it may also delay or terminate our ability to test our product candidates. If any partner fails to conduct the collaborative activities successfully or in a timely manner, the preclinical or clinical development or commercialization of the affected product candidates or research programs could be delayed or terminated.

Under typical partnering agreements, we would expect to receive revenue for the research and development of our product candidates based on achievement of specific milestones, as well as royalties based on a percentage of sales of the commercialized products. Achieving these milestones will depend, in part, on the efforts of our partner as well as our own. If we, or any partner, fail to meet specific milestones, then the partnership may be terminated, which could reduce our revenues. For more information on risks relating to our third-party collaborative agreements, see “Risks Relating to our Collaborative Relationships.”

***We may be unable to license gene transfer technologies that we may need to commercialize our ZFP technology.***

In order to regulate or modify a gene in a cell, the ZFP must be efficiently delivered to the cell. We have licensed certain gene transfer technologies for our ZFP in research including AAV and mRNA technology. We are evaluating these systems and other

technologies that may need to be used in the delivery of ZFP into cells for *in vitro* and *in vivo* applications. However, we may not be able to license the gene transfer technologies required to develop and commercialize our product candidates. We have not developed our own gene transfer technologies, and we rely on our ability to enter into license agreements to provide us with rights to the necessary gene transfer technology. Our approach has been to license appropriate technology as required. The inability to obtain a license to use gene transfer technologies with entities which own such technology on reasonable commercial terms, if at all, could delay or prevent the preclinical evaluation, drug development collaborations, clinical testing, and/or commercialization of our therapeutic product candidates.

***Our gene regulation and genome editing technology is relatively new, and if we are unable to use this technology in all our intended applications, it would limit our revenue opportunities.***

Our technology involves a relatively new approach to gene regulation and genome editing. Although we have generated ZFPs for thousands of gene sequences, we have not created ZFPs for all gene sequences and may not be able do so, which could limit the usefulness of our technology. In addition, while we have demonstrated the function of engineered ZFNs and ZFP TFs in mammalian cells, yeast, insects, plants and animals, we have not yet demonstrated clinical efficacy of this technology in a controlled clinical trial in humans, and the failure to do so could restrict our ability to develop commercially viable products. If we, and our collaborators or strategic partners, are unable to extend our results to new commercially important genes, experimental animal models, and human clinical studies, we may be unable to use our technology in all its intended applications.

The expected value and utility of our ZFNs and ZFP TFs is in part based on our belief that the targeted editing of genes or specific regulation of gene expression may enable us to develop a new therapeutic approach as well as to help scientists better understand the role of genes in disease, and to aid their efforts in drug discovery and development. We also believe that ZFP-mediated targeted genome editing and gene regulation will have utility in agricultural applications. There is only a limited understanding of the role of specific genes in all these fields. Life sciences companies have developed or commercialized only a few products in any of these fields based on results from genomic research or the ability to regulate gene expression. We, our collaborators or our strategic partners, may not be able to use our technology to identify and validate drug targets or to develop commercial products in the intended markets.

Effective delivery of ZFNs and ZFP TFs into the appropriate target cells and tissues is critical to the success of the therapeutic applications of our ZFP technology. In order to have a meaningful therapeutic effect, these products must be delivered to sufficient numbers of cells in the targeted tissue. The ZFN or ZFP TF must be present in that tissue for sufficient time to effect either modification of a therapeutically relevant gene or regulation of its expression. In our current clinical and preclinical programs, we administer these product candidates as a nucleic acid that encodes the ZFN or ZFP TF. We use different formulations to deliver the ZFN or ZFP TF depending on the required duration of expression, the targeted tissue and the indication that we intend to treat, including our proprietary AAV delivery system. However, there can be no assurances that we will be able to effectively deliver our ZFNs and ZFP TFs to produce a beneficial therapeutic effect.

***We are conducting proprietary research to discover new product candidates. These programs increase our financial risk of product failure, may significantly increase our research expenditures, and may involve conflicts with future collaborators and strategic partners.***

Our proprietary research programs consist of research that is funded solely by us or by grant funding and in which we retain exclusive rights to therapeutic products generated by such research. This is in contrast to certain of our research programs that may be funded by corporate partners in which we may share rights to any resulting products. Conducting proprietary research programs may not generate corresponding revenue and may create conflicts with our collaborators or strategic partners over rights to our intellectual property with respect to our proprietary research activities. Any conflict with our collaborators or strategic partners could reduce our ability to enter into future collaborations or partnering agreements and negatively impact our relationship with existing collaborators and partners that could reduce our revenue and delay or terminate our product development. As we continue to focus our strategy on proprietary research and therapeutic development, we expect to experience greater business risks, expend significantly greater funds and require substantial commitments of time from our management and staff.

***Even if our technology proves to be effective, it still may not lead to commercially viable products.***

Even if our collaborators or strategic partners are successful in using our ZFP technology in drug discovery, protein production, therapeutic development or other areas in which we have licensed our technology, such as plant agriculture, they may not be able to commercialize the resulting products or may decide to use other methods competitive with our technology. To date, no company has received marketing approval or has developed or commercialized any therapeutic or agricultural products based on our ZFP technology. Should our technology fail to provide safe, effective, useful or commercially viable approaches to the discovery and development of these products, this would significantly limit our business and future growth and would adversely affect our value.

***Even if our product development efforts are successful and even if the requisite regulatory approvals are obtained, our products may not gain market acceptance among physicians, patients, healthcare payers and the medical community.***

Even if we obtain regulatory approval for any of our product candidates that we may develop or acquire in the future, the product may not gain market acceptance among physicians, healthcare payors, patients or the medical community. Market acceptance of any of our product candidates for which we receive approval depends on a number of factors, including:

- the efficacy and safety of such product candidates as demonstrated in clinical trials;
- the clinical indications and patient populations for which the product candidate is approved;
- acceptance by physicians, major cancer treatment centers and patients of the drug as a safe and effective treatment;
- the adoption of novel gene therapies by physicians, hospitals and third-party payors;
- the potential and perceived advantages of product candidates over alternative treatments;
- the safety of product candidates seen in a broader patient group, including its use outside the approved indications;
- any restrictions on use together with other medications;
- the prevalence and severity of any side effects;
- product labeling or product insert requirements of the FDA or other regulatory authorities;
- the timing of market introduction of our products as well as competitive products;
- the development of manufacturing and distribution processes for our product candidates;
- the cost of treatment in relation to alternative treatments;
- the availability of coverage and adequate reimbursement and pricing by third-party payors and government authorities and the willingness of patients to pay out-of-pocket in the absence of coverage by third-party payors;
- relative convenience and ease of administration; and
- the effectiveness of our sales and marketing efforts and those of our collaborators.

If any of our product candidates are approved but fail to achieve market acceptance among physicians, patients, healthcare payors or treatment centers, we will not be able to generate significant revenues, which would compromise our ability to become profitable.

***Even if we are able to commercialize our product candidates, the products may not receive coverage and adequate reimbursement from third-party payors in the United States and in other countries in which we seek to commercialize our products, which could harm our business.***

Our ability to commercialize any product successfully will depend, in part, on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations.

Government authorities and third-party payors, such as private health insurers and health maintenance organizations, determine which medications they will cover and establish reimbursement levels. A primary trend in the healthcare industry is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. Third-party payors may also seek additional clinical evidence, beyond the data required to obtain regulatory approval, demonstrating clinical benefits and value in specific patient populations before covering our products for those patients. We cannot be sure that coverage and adequate reimbursement will be available for any product that we commercialize and, if reimbursement is available, what the level of reimbursement will be. Coverage and reimbursement may impact the demand for, or the price of, any product candidate for which we obtain regulatory approval. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize any product candidate for which we obtain regulatory approval.

There may be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for coverage and reimbursement does not imply that any drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may

also not be sufficient to cover our costs and may only be temporary. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors in the United States often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and profitable reimbursement rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

***Recently enacted and future legislation, including potentially unfavorable pricing regulations or other healthcare reform initiatives, may increase the difficulty and cost for us to obtain regulatory approval of and commercialize our product candidates and affect the prices we may obtain.***

The regulations that govern, among other things, regulatory approvals, coverage, pricing and reimbursement for new drug products vary widely from country to country. In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay regulatory approval of our product candidates, restrict or regulate post-approval activities and affect our ability to successfully sell any product candidates for which we obtain regulatory approval. In particular, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the Affordable Care Act, was enacted, which substantially changes the way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act and its implementing regulations, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics, including our product candidates, that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, provided incentives to programs that increase the federal government's comparative effectiveness research and established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D.

Some of the provisions of the Affordable Care Act have yet to be fully implemented, and there have been legal and political challenges to certain aspects of the Affordable Care Act. Since January 2017, President Trump has signed two executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the Affordable Care Act. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the Affordable Care Act. While Congress has not passed repeal legislation, the Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, on January 22, 2018 President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain Affordable Care Act-mandated fees. Congress may consider other legislation to repeal or replace elements of the Affordable Care Act.

Other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013, and, due to subsequent legislative amendments to the statute, including the Bipartisan Budget Act of 2018, will remain in effect through 2027 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Also, there has been heightened governmental scrutiny recently over pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products, some of which are included in the Trump administration's budget proposal for fiscal year 2019. At the federal level, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have become increasingly active in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints,

discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, have been designed to encourage importation from other countries and bulk purchasing.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for our product candidates, if we obtain regulatory approval;
- our ability to set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the regulatory approvals of our product candidates, if any, may be.

In the United States, the European Union and other potentially significant markets for our product candidates, government authorities and third-party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average selling prices. For example, in the United States, there have been several recent Congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. Furthermore, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the European Union will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our future product sales and results of operations. These pressures can arise from rules and practices of managed care groups, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical reimbursement policies and pricing in general.

***Price controls may be imposed in foreign markets, which may adversely affect our future profitability.***

In some countries, particularly member states of the European Union, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of regulatory approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. In some countries, we, or our collaborators, may be required to conduct a clinical trial or other studies that compare the cost-effectiveness of our product candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be adversely affected.

***Even if we complete the necessary preclinical and clinical studies, we cannot predict when or if we will obtain regulatory approval to commercialize a product candidate or the approval may be for a more narrow indication than we expect.***

We cannot commercialize a product until the appropriate regulatory authorities have reviewed and approved the product candidate. Even if our product candidates demonstrate safety and efficacy in clinical studies, the regulatory agencies may not complete their review processes in a timely manner, or we may not be able to obtain regulatory approval. Additional delays may result if an FDA Advisory Committee or other regulatory advisory group or authority recommends non-approval or restrictions on approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory agency policy during the period of product development, clinical studies and the review process. Regulatory agencies also may approve a treatment candidate for fewer or more limited indications than requested or may grant approval subject to the performance of post-marketing studies. In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our treatment candidates. For example, the development

of certain product candidates for pediatric use is an important part of our current business strategy, and if we are unable to obtain regulatory approval for the desired age ranges, our business may suffer.

***Even if we obtain regulatory approval for a product candidate, our products will remain subject to regulatory scrutiny.***

Even if we obtain regulatory approval in a jurisdiction, the regulatory authority may still impose significant restrictions on the indicated uses or marketing of our product candidates, or impose ongoing requirements for potentially costly post-approval studies, post-market surveillance or patient or drug restrictions. For example, the FDA typically advises that patients treated with gene therapy undergo follow-up observations for potential adverse events for a 15-year period. Additionally, the holder of an approved BLA is obligated to monitor and report adverse events and any failure of a product to meet the specifications in the BLA. The holder of an approved BLA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. Advertising and promotional materials must comply with FDA rules and are subject to FDA review, in addition to other potentially applicable federal and state laws.

In addition, product manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with good manufacturing practices, or GMP, and adherence to commitments made in the BLA. If we or a regulatory agency discovers previously unknown problems with a product such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions relative to that product or the manufacturing facility, including requiring recall or withdrawal of the product from the market or suspension of manufacturing.

If we fail to comply with applicable regulatory requirements following approval of any of our product candidates, a regulatory agency may:

- issue a warning letter asserting that we are in violation of the law;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval;
- suspend any ongoing clinical studies;
- refuse to approve a pending marketing application, such as a BLA or supplements to a BLA submitted by us;
- seize product; or
- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize our product candidates and generate revenues.

***Failure to obtain regulatory approval in international jurisdictions would prevent our product candidates from being marketed abroad.***

In addition to regulations in the United States, to market and sell our products in the European Union, many Asian countries and other jurisdictions, we must obtain separate regulatory approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. Clinical trials accepted in one country may not be accepted by regulatory authorities in other countries. In addition, many countries outside the United States require that a product be approved for reimbursement before it can be approved for sale in that country. A product candidate that has been approved for sale in a particular country may not receive reimbursement approval in that country. We may not be able to obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. We may not be able to file for regulatory approvals and may not receive necessary approvals to commercialize our products in any market. If we are unable to obtain approval of any of our product candidates by regulatory authorities in the European Union, Asia or elsewhere, the commercial prospects of that product candidate may be significantly diminished, our business prospects could decline and this could materially adversely affect our business, results of operations and financial condition.

***Our relationships with customers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.***

Healthcare providers, physicians and third-party payors will play a primary role in the recommendation and prescription of any product candidates for which we obtain regulatory approval. Our current and future arrangements with healthcare providers, third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we would market, sell and distribute our products. As a pharmaceutical company, even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. Restrictions under applicable federal and state healthcare laws and regulations that may affect our ability to operate include the following:

- the federal healthcare Anti-Kickback Statute will constrain our marketing practices, educational programs, pricing policies, and relationships with healthcare providers or other entities, by prohibiting, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid;
- federal civil and criminal false claims laws and civil monetary penalty laws impose criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, including the Medicare and Medicaid programs, claims for payment or approval that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and also created federal criminal laws that prohibit knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statements in connection with the delivery of or payment for healthcare benefits, items or services;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information held by certain healthcare providers, health plans and healthcare clearinghouses and their business associates;
- the federal Physician Payments Sunshine Act created under the Affordable Care Act requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services, or

CMS, information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members and applicable group purchasing organizations;

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and
- state and foreign laws govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, personal imprisonment, exclusion from government funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, and the curtailment or restructuring of our operations. If any physicians or other healthcare providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

***Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could cause significant liability for us and harm our reputation.***

We are exposed to the risk of employee fraud or other misconduct, including intentional failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards we have established, comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, report financial information or data accurately or disclose unauthorized activities to us. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

***Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.***

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. Product liability claims may be brought against us by subjects enrolled in our clinical trials, patients, healthcare providers or others using, administering or selling our products. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we may develop;
- termination of clinical trial sites or entire trial programs;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial subjects or patients;
- loss of revenue;

- diversion of management and scientific resources from our business operations; and
- the inability to commercialize any products that we may develop.

We currently hold product liability insurance coverage at a level that we believe is customary for similarly situated companies and adequate to provide us with insurance coverage for foreseeable risks, but which may not be adequate to cover all liabilities that we may incur. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. We intend to expand our insurance coverage for products to include the sale of commercial products if we obtain regulatory approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products that receive regulatory approval. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. A successful product liability claim or series of claims brought against us, particularly if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business.

***We currently rely on third parties to conduct some or all aspects of manufacturing of our product candidates for preclinical and clinical development. If one of our third-party manufacturers fails to perform adequately or fulfill our needs, we may be required to incur significant costs and devote significant efforts, to find new suppliers or manufacturers.***

We currently have limited experience in, and we do not own facilities for, clinical-scale manufacturing of our product candidates and we rely upon third-party contract manufacturing organizations to manufacture and supply drug product for our preclinical and clinical studies. The manufacture of pharmaceutical products in compliance with the FDA's current good manufacturing practices, or cGMP, requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in production, including difficulties with production costs and yields, quality control, including stability of the product candidate and quality assurance testing, shortages of qualified personnel, as well as compliance with strictly enforced cGMP requirements, other federal and state regulatory requirements and foreign regulations. If our manufacturers were to encounter any of these difficulties or otherwise fail to comply with their obligations to us or under applicable regulations, our ability to provide study drugs in our clinical studies would be jeopardized. Any delay or interruption in the supply of clinical study materials could delay the completion of our clinical studies, increase the costs associated with maintaining our clinical study programs and, depending upon the period of delay, require us to commence new studies at significant additional expense or terminate the studies completely.

All manufacturers of our product candidates must comply with cGMP requirements enforced by the FDA through its facilities inspection program. These requirements include, among other things, quality control, quality assurance and the maintenance of records and documentation. Manufacturers of our product candidates may be unable to comply with these cGMP requirements and with other FDA, state and foreign regulatory requirements. The FDA or similar foreign regulatory agencies may also implement new standards at any time, or change their interpretation and enforcement of existing standards for manufacture, packaging or testing of products. We have limited control over our manufacturers' compliance with these regulations and standards. Failure to comply with these requirements may result in fines and civil penalties, suspension of production, suspension or delay in product approval, product seizure or recall or withdrawal of product approval. If the safety of any product supplied is compromised due to our manufacturers' failure to adhere to applicable laws or for other reasons, we may not be able to obtain regulatory approval for or successfully commercialize our products and we may be held liable for any injuries sustained as a result. Any of these factors could cause a delay of clinical studies, regulatory submissions, approvals or commercialization of our product candidates, entail higher costs or impair our reputation.

Our current agreements with our suppliers do not provide for the entire supply of the drug product necessary for all anticipated clinical studies or for full scale commercialization. If we and our suppliers cannot agree to the terms and conditions for them to provide the drug product necessary for our clinical and commercial supply needs, we may not be able to manufacture the product candidate until a qualified alternative supplier is identified, which could also delay the development of, and impair our ability to commercialize, our product candidates.

The number of third-party suppliers with the necessary manufacturing and regulatory expertise and facilities is limited, and it could be expensive and take a significant amount of time to arrange for alternative suppliers, which could have a material adverse effect on our business. New suppliers of any product candidate would be required to qualify under applicable regulatory requirements and would need to have sufficient rights under applicable intellectual property laws to the method of manufacturing the product candidate. Obtaining the necessary FDA approvals or other qualifications under applicable regulatory requirements and ensuring non-infringement of third-party intellectual property rights could result in a significant interruption of supply and could require the new manufacturer to bear significant additional costs which may be passed on to us.

***There are risks associated with manufacturing for clinical and commercial use. Manufacturing biological components at the appropriate scale and quality is complex and difficult.***

There are risks associated with manufacturing our products including, among others, GMP compliance, cost overruns, technical problems with process scale-up, process reproducibility, stability issues, lot consistency and timely availability of raw materials. Even if efficacy and safety data from our clinical trials would otherwise support regulatory approval for a product candidate, there is no assurance that we or any third-party manufacturer will be able to manufacture our product candidates to specifications at levels necessary to support or maintain commercial approval by the FDA or other regulatory authorities. In addition, we may not be able to manufacture our product candidates in sufficient quantities to meet the requirements for a potential launch or to meet potential future demand. If we or our third-party manufacturers are unable to produce sufficient quantities of the approved product for commercialization, either on a timely basis or at all, our commercialization efforts would be impaired, which would have a material adverse effect on our business, financial condition, results of operations and growth prospects.

We face uncertainties and risks associated with the manufacture of our pipeline product candidates. Our product candidates are biologics and their manufacture involves complex processes, including the development of cell lines or cell systems to produce the biologic, with the challenge of significant variability. Further, there are difficulties in growing large quantities of such cells and harvesting and purifying the biologic produced by them. The cost to manufacture biologics is generally far higher than traditional small molecule chemical compounds, and the manufacturing process can be difficult to reproduce. There is no guarantee we will be successful in establishing a larger-scale commercial manufacturing process for our pipeline product candidates or obtaining the needed manufacturing capacity. Due to the high cost to manufacture, inherent uncertainty related to manufacturing costs, and uncertainty in our patient population, there is risk that some of our product candidates may not be commercially viable.

***We do not currently have the infrastructure or capability to manufacture, market and sell therapeutic products on a commercial scale.***

In order for us to commercialize our therapeutic products directly, we would need to develop, or obtain through outsourcing arrangements, the capability to manufacture, market and sell our products on a commercial scale. Currently, we do not have the ability nor the financial resources to establish the infrastructure and organizations needed to execute these functions, including such infrastructure needed for the commercialization of any product from our therapeutic program, which can be complex and costly. If we are unable to establish adequate manufacturing, sales, marketing and distribution capabilities, we will not be able to directly commercialize our therapeutics products, which would limit our future growth.

***If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate any revenue.***

We do not currently have an organization for the sale, marketing and distribution of pharmaceutical products and the cost of establishing and maintaining such an organization may exceed the cost-effectiveness of doing so. In order to market any products that may be approved by the FDA and comparable foreign regulatory authorities, we must build our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. There are significant risks involved in building and managing a sales organization, including our ability to hire, retain and incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of these products. If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, we may not be able to generate product revenues and may not become profitable. We will be competing with many companies that currently have extensive and well-funded sales and marketing operations. Without an internal commercial organization or the support of a third party to perform sales and marketing functions, we may be unable to compete successfully against these more established companies. If we are not successful in commercializing our current or future product candidates either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we would incur significant additional losses.

***We will need to grow the size of our organization, and we may experience difficulties in managing this growth.***

As of February 15, 2018, we had 182 full-time employees. We need to grow the size of our organization in order to support our continued development and potential commercialization of our product candidates. In particular, we will need to add substantial numbers of additional personnel and other resources to support our development and potential commercialization of our product candidates. As our development and commercialization plans and strategies continue to develop, or as a result of any future acquisitions, our need for additional managerial, operational, manufacturing, sales, marketing, financial and other resources will

increase. Our management, personnel and systems currently in place may not be adequate to support this future growth. Future growth would impose significant added responsibilities on members of management, including:

- managing our preclinical studies and clinical trials effectively;
- identifying, recruiting, maintaining, motivating and integrating additional employees;
- managing our internal development efforts effectively while complying with our contractual obligations to licensors, licensees, contractors and other third parties;
- improving our managerial, development, operational, information technology, and finance systems; and
- expanding our facilities.

As our operations expand, we will also need to manage additional relationships with various strategic partners, suppliers and other third parties. Our future financial performance and our ability to commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to manage our development efforts and preclinical studies and clinical trials effectively and hire, train and integrate additional management, research and development, manufacturing, administrative and sales and marketing personnel. Our failure to accomplish any of these tasks could prevent us from successfully growing our company

**Risks Relating to our Industry**

***If our competitors develop, acquire, or market technologies or products that are more effective than ours, this would reduce or eliminate our commercial opportunity.***

Any products that we or our collaborators or strategic partners develop by using our ZFP technology platform will enter into highly competitive markets. Even if we are able to generate products that are safe and effective for their intended use, competing technologies may prove to be more effective or less expensive, which, to the extent these competing technologies achieve market acceptance, will limit our revenue opportunities. In some cases, competing technologies have proven to be effective and less expensive. Competing technologies may include other methods of regulating gene expression or modifying genes. ZFNs and ZFP TFs have broad application in the life sciences industry and compete with a broad array of new technologies and approaches being applied to genetic research by many companies. Competing proprietary technologies with our product development focus include but are not limited to:

- For genome editing and gene therapy products:
  - recombinant proteins;
  - other gene therapy/cDNAs;
  - antisense;
  - siRNA and microRNA approaches, exon skipping;
  - small molecule drugs;
  - monoclonal antibodies;
  - CRISPR/Cas technology; and
  - TALE proteins, meganucleases, and MegaTALs.
- Our Non-Therapeutic Applications compete against similar technologies:

In addition to possessing competing technologies, our competitors include pharmaceutical and biotechnology companies with:

- substantially greater capital resources than ours;
- larger research and development staffs and facilities than ours; and
- greater experience in product development and in obtaining regulatory approvals and patent protection.

These organizations also compete with us to:

- attract qualified personnel;
- attract parties for acquisitions, joint ventures or other collaborations; and
- license the proprietary technologies of academic and research institutions that are competitive with our technology, which may preclude us from pursuing similar opportunities.

Accordingly, our competitors may succeed in obtaining patent protection or commercializing products before us. In addition, any products that we develop may compete with existing products or services that are well established in the marketplace.

***Our product candidates are based on a novel technology, which makes it difficult to predict the timing and costs of development and of subsequently obtaining regulatory approval.***

We have concentrated our research and development efforts on genome editing, gene therapy, gene regulation and cell therapy. The regulatory approval process for novel product candidates such as ours is unclear and may be lengthier and more expensive than the process for other, better-known or more extensively studied product candidates.

Adverse developments in clinical trials of gene therapy products conducted by others may cause the FDA or other oversight bodies to change the requirements for approval of our product candidates.

These regulatory review committees and advisory groups, and any new guidelines they promulgate, may lengthen the regulatory review process, require us to perform additional preclinical studies or clinical trials, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our current or future product candidates or lead to significant post-approval limitations or restrictions. As we advance our product candidates, we will be required to consult with these regulatory and advisory groups and comply with applicable guidelines. If we fail to do so, we may be required to delay or discontinue development of our product candidates. These additional processes may result in a review and approval process that is longer than we otherwise would have expected. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product revenue, and our business, financial condition, results of operations and prospects would be harmed. Even if our product candidates are approved, we expect that the FDA will require us to submit follow-up data regarding our clinical trial subjects for a number of years after approval. If this follow-up data shows negative long-term safety or efficacy outcomes for these patients, the FDA may revoke its approval or change the label of our products in a manner that could have an adverse impact on our business.

In addition, adverse developments in clinical trials of gene therapy products conducted by others may cause the FDA or other oversight bodies to change the requirements for approval of our product candidates. FDA only recently approved the first vector-based gene therapy, LUCTURNA, and only two gene therapy products, uniQure N.V.'s Glybera and GlaxoSmithKline's Strimvelis, have received marketing authorization from the EMA. As a result, it is difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our product candidates.

***Our gene therapy approach utilizes vectors derived from viruses, which may be perceived as unsafe or may result in unforeseen adverse events. Negative public opinion and increased regulatory scrutiny of gene therapy may damage public perception of the safety of our product candidates and adversely affect our ability to conduct our business or obtain regulatory approvals for our product candidates.***

Gene therapy remains a novel technology, with only one vector-based gene therapy product approved for a genetic disease to date in the United States and only two gene therapy products for genetic diseases approved to date in the European Union. Public perception may be influenced by claims that gene therapy is unsafe, and gene therapy may not gain the acceptance of the public or the medical community. In particular, our success will depend upon physicians who specialize in the treatment of genetic diseases targeted by our product candidates, prescribing treatments that involve the use of our product candidates in lieu of, or in addition to, existing treatments with which they are familiar and for which greater clinical data may be available. More restrictive government regulations or negative public opinion would have an adverse effect on our business, financial condition, results of operations and prospects and may delay or impair the development and commercialization of our product candidates or demand for any products we may develop. For example, earlier gene therapy trials led to several well-publicized adverse events, including cases of leukemia and death seen in other trials using other vectors. Serious adverse events in our clinical trials, or other clinical trials involving gene therapy products or our competitors' products, even if not ultimately attributable to the relevant product candidates, and the resulting publicity, could result in increased government regulation, unfavorable public perception, potential regulatory delays in the testing or approval

of our product candidates, stricter labeling requirements for those product candidates that are approved and a decrease in demand for any such product candidates.

***Laws or public sentiment may limit the production of genetically modified agricultural products, and these laws could reduce our partner's ability to sell such products.***

Genetically modified products are currently subject to public debate and heightened regulatory scrutiny, either of which could prevent or delay production of agricultural products. We have exclusive right to use our ZFP technology to modify the genomes or alter the nucleic acid or protein expression of plant cells, plants or plant cell cultures. The field-testing, production and marketing of genetically modified plants and plant products are subject to federal, state, local and foreign governmental regulation. Regulatory agencies administering existing or future regulations or legislation may not allow production and marketing of our genetically modified products in a timely manner or under technically or commercially feasible conditions. In addition, regulatory action or private litigation could result in expenses, delays or other impediments to our product development programs or the commercialization of resulting products.

The FDA currently applies the same regulatory standards to foods developed through genetic engineering as those applied to foods developed through traditional plant breeding. Genetically engineered food products, however, will be subject to pre-market review if these products raise safety questions or are deemed to be food additives. Governmental authorities could also, for social or other purposes, limit the use of genetically modified products created with our gene regulation technology.

Even if the regulatory approval for genetically modified products developed using our ZFP technology is obtained, our success will also depend on public acceptance of the use of genetically modified products including drugs, plants, and plant products. Claims that genetically modified products are unsafe for consumption or pose a danger to the environment may influence public attitudes. Our genetically modified products may not gain public acceptance. The subject of genetically modified organisms has received negative publicity in the United States and particularly in Europe, and such publicity has aroused public debate. The adverse publicity in Europe could lead to greater regulation and trade restrictions on imports of genetically altered products. Similar adverse public reaction or sentiment in the United States to genetic research and its resulting products could result in greater domestic regulation and could decrease the demand for our technology and products.

**Risks Relating to our Finances**

***We have incurred significant operating losses since inception and anticipate that we will incur continued losses for the foreseeable future.***

We have generated operating losses since we began operations in 1995. Our net losses for the years ended December 31, 2017, 2016 and 2015 were $54.6 million, $71.7 million and $40.7 million, respectively. The extent of our future losses and the timing of profitability are uncertain, and we expect to incur losses for the foreseeable future. We have been engaged in developing our ZFP technology since inception, which has and will continue to require significant research and development expenditures. To date, we have generated our funding from issuance of equity securities, revenues derived from collaboration agreements, other strategic partnerships in non-therapeutic applications of our technology, federal government research grants and grants awarded by research foundations. As of December 31, 2017, we had an accumulated deficit of $495.5 million. Since our initial public offering in 2000, we have generated an aggregate of approximately $418.6 million in gross proceeds from the sale of our equity securities. We expect to continue to incur additional operating losses for the next several years as we continue to advance our product candidates. If the time required to generate significant product revenues and achieve profitability is longer than we currently anticipate or if we are unable to generate liquidity through equity financing or other sources of funding, we may be forced to curtail or suspend our operations.

***We may be unable to raise additional capital, which would harm our ability to develop our technology and products.***

We have incurred significant operating losses and negative operating cash flows since inception and have not achieved profitability. We expect capital outlays and operating expenditures to increase over the next several years as we expand our infrastructure and research and product development activities. While we believe our financial resources will be adequate to sustain our current operations for at least the next twelve months, we will likely seek additional sources of capital through equity or debt financing. In addition, as we focus our efforts on proprietary human therapeutics, we will need to seek FDA approval of potential products, a process that could cost in excess of hundreds of millions of dollars per product. Furthermore, we may experience difficulties in accessing the capital market due to external factors beyond our control such as volatility in the equity markets for emerging biotechnology companies and general economic and market conditions both in the United States and abroad. We cannot be certain that we will be able to obtain financing on terms acceptable to us, or at all. Our failure to obtain adequate and timely funding will materially adversely affect our business and our ability to develop our technology and products candidates. Furthermore, any sales

of additional equity securities may result in dilution to our stockholders and any debt financing may include business and financial covenants that restricts our operations.

***We are at the development phase of operations and may not succeed or become profitable.***

We began operations in 1995, are in the early phases of product development for the most advanced candidates in our therapeutics pipeline, and we have incurred significant losses since inception. To date, our revenues have been generated from collaboration agreements, other collaborations in non-therapeutic applications of our technology, federal government research grants and grants awarded by research foundations. Our focus on higher-value therapeutic product development and related collaboration requires us to incur substantial expenses associated with product development. In addition, the preclinical or clinical failure of any single product may have a significant effect on the actual or perceived value of our stock. Our business is subject to all of the risks inherent in the development of a new technology, which includes the need to:

- attract and retain qualified scientific and technical staff and management, particularly scientific staff with expertise to develop our early-stage technology into therapeutic products;
- obtain sufficient capital to support the expense of developing our technology platform and developing, testing and commercializing products;
- develop a market for our products; and
- successfully transition from a company with a research focus to a company capable of supporting commercial activities.

***The recently passed comprehensive tax reform bill could adversely affect our business and financial condition.***

On December 22, 2017, President Trump signed into law new legislation that significantly revises the Internal Revenue Code of 1986, as amended (the Code). The newly enacted federal income tax law, among other things, contains significant changes to corporate taxation, including adoption of a flat 21% corporate tax rate, limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction of net operating losses generated in tax years beginning after December 31, 2017 to 80% of current year taxable income and elimination of carrybacks of such net operating losses, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, current inclusion in U.S. federal taxable income of certain earnings of controlled foreign corporations, immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits (including reducing the business tax credit for certain clinical testing expenses incurred in the testing of certain drugs for rare diseases or conditions generally referred to as “orphan drugs”). Notwithstanding the reduction in the corporate income tax rate, the overall impact of the new federal tax law is uncertain, and our business and financial condition could be adversely affected. In addition, it is uncertain if and to what extent various states will conform to the newly enacted federal tax law. The impact of this tax reform on holders of our common stock is also uncertain and could be adverse. Investors should consult with their legal and tax advisors with respect to this legislation and the potential tax consequences of investing in or holding our common stock.

**Risks Relating to our Relationships with Collaborators and Strategic Partners**

***If conflicts arise between us and our collaborators or strategic partners, these parties may act in their self-interest, which may limit our ability to implement our strategies.***

If conflicts arise between our corporate or academic collaborators or strategic partners and us, the other party may act in its self-interest, which may limit our ability to implement our strategies. Some of our academic collaborators and strategic partners are conducting multiple product development efforts within each area that is the subject of the collaboration with us. Our collaborators or strategic partners may develop, either alone or with others, products in related fields that are competitive with the products or potential products that are the subject of these collaborations. Competing products, either developed by the collaborators or strategic partners or to which the collaborators or strategic partners have rights, may result in the withdrawal of partner support for our product candidates.

Some of our collaborators or strategic partners could also become our competitors in the future. Our collaborators or strategic partners could develop or invest in competing products, preclude us from entering into collaborations with their competitors, fail to obtain timely regulatory approvals, terminate their agreements with us prematurely, or fail to devote sufficient resources to the development and commercialization of products. Any of these developments could harm our product development efforts.

***Our collaborators and strategic partners may control aspects of our clinical trials, which could result in delays and other obstacles in the commercialization of our proposed products.***

We depend on third-party collaborators and strategic partners to design and conduct our clinical trials for some of our therapeutic programs. As a result, we may not be able to conduct these programs in the manner or on the time schedule we currently contemplate, which may negatively impact our business operations. In addition, if any of these collaborators or strategic partners withdraws support for our programs or proposed products or otherwise impair their development; our business could be negatively affected.

For example, under our agreements with Kite, Pfizer and Bioverativ, they have control and broad discretion over all or certain aspects of the clinical development and commercialization of any product developed under the agreement, and we will have little, if any, influence on how these programs will be conducted. Our lack of control over the clinical development in such agreements could cause delays or other difficulties in the development and commercialization of our product candidates, which may prevent us from completing the intended IND filings in a timely fashion and receiving any milestone, royalty payments and other benefits under the agreement. In addition, under their respective agreements, our third-party collaborators have certain rights to terminate the agreements by providing us with advance notices, therefore, the actual milestone payments that we may receive under these agreements may be lower than the full amounts stated above.

***Our collaborators or strategic partners may decide to adopt alternative technologies or may be unable to develop commercially viable products with our technology, which would negatively impact our revenues and our strategy to develop these products.***

Our collaborators or strategic partners may adopt alternative technologies, which could decrease the marketability of ZFP technology. Additionally, because many of our collaborators or strategic partners are likely to be working on more than one development project, they could choose to shift their resources to projects other than those they are working on with us. If they do so, this would delay our ability to test our technology and would delay or terminate the development of potential products based on our ZFP technology. Further, our collaborators and strategic partners may elect not to develop products arising out of our collaborative and strategic partnering arrangements or to devote sufficient resources to the development, manufacturing, marketing or sale of these products. If they terminate the collaborative relationship with us, we will be required to seek the support of other partners or collaborators. We may not have sufficient resources and expertise to develop these programs by ourselves, and we may not be able to identify a suitable partner or negotiate a favorable collaboration agreement to allow us to continue the development of these programs. If any of these events occur, we may not be able to develop our technologies or commercialize our products.

***If the licensed products under our non-therapeutic license agreements are not successfully commercialized, or our third-party licensees terminate our agreements, our ability to generate revenue under these license agreements may be limited.***

We have a number of collaboration agreements with third parties whereby we licensed our ZFP technologies to develop products in non- therapeutic fields, such as laboratory research reagents, protein pharmaceuticals, and, transgenic animals, as well as plant agriculture

We cannot be certain that we or our collaboration partners will succeed in the development of commercially viable products in these non-therapeutic fields of use, and there is no guarantee that we or our collaboration partners will achieve the milestones set forth in the respective license agreements. To the extent we or our collaboration partners do not succeed in developing and commercializing products or if we or our collaboration partners fail to achieve such milestones, our revenues and benefits under the license agreements will be limited. In the event our third party licensees decide to terminate the license agreements, our ability to generate revenue under such license agreements will cease.

***Our collaborations with outside scientists may be subject to change, which could limit our access to their expertise.***

We work with scientific advisors and collaborators at academic research institutions. These scientists are not our employees and may have other commitments that would limit their availability to us. Although our scientific advisors generally agree not to do competing work, if a conflict of interest between their work for us and their work for another entity arises, we may lose their services. Although our scientific advisors and academic collaborators sign agreements not to disclose our confidential information, it is possible that some of our valuable proprietary knowledge may become publicly known through them, which may cause competitive harm to our business.

**Risks Relating to our Intellectual Property**

***Because it is difficult and costly to protect our proprietary rights, and third parties may have filed patent applications that are similar to ours, we cannot guarantee the proprietary protection of our technologies and products.***

Our commercial success will depend in part on obtaining patent protection of our technology and successfully defending any of our patents that may be challenged. The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and can involve complex legal and factual questions. No consistent policy regarding the breadth of claims allowed in biotechnology patents has emerged to date. Accordingly, we cannot predict the breadth of claims allowed in patents we own or license that a third party may receive.

As disclosed herein, we are a party to various license agreements that give us rights under specified patents and patent applications. Our current licenses, as our future licenses frequently will, contain performance obligations. If we fail to meet those obligations, the licenses could be terminated. If we are unable to continue to license these technologies on commercially reasonable terms, or at all, we may be forced to delay or terminate aspects of our product development and research activities.

With respect to our present and any future sublicenses, because our rights derive from those granted to our sublicensor, we are subject to the risk that our sublicensor may fail to perform its obligations under the master license or fail to inform us of useful improvements in, or additions to, the underlying intellectual property owned by the original licensor.

We are unable to exercise the same degree of control over intellectual property that we license from third parties as we exercise over our internally developed intellectual property. We do not control the prosecution of certain of the patent applications that we license from third parties; therefore, the patent applications may not be prosecuted as we desire or in a timely manner.

The degree of future protection for our proprietary rights is uncertain, and we cannot ensure that:

- we or our licensors were the first to make the inventions covered by each of our pending patent applications;
- we or our licensors were the first to file patent applications for these inventions;
- the patents of others will not have an adverse effect on our ability to do business;
- others will not independently develop similar or alternative technologies or reverse engineer any of our products, processes or technologies;
- any of our pending patent applications will result in issued patents;
- any patents issued or licensed to us or our collaborators or strategic partners will provide a basis for commercially viable products or will provide us with any competitive advantages;
- any patents issued or licensed to us will not be challenged and invalidated by third parties; or
- we will develop additional products, processes or technologies that are patentable.

Others have filed and in the future are likely to file patent applications that are similar to ours. We are aware that there are academic groups and other companies that are attempting to develop technology that is based on the use of zinc finger, TALE, CRISPR/Cas and other DNA-binding proteins, and that these groups and companies have filed patent applications. Several patents have been issued, although we have no current plans to use the associated inventions. If these or other patents issue, it is possible that the holder of any patent or patents granted on these applications may bring an infringement action against our collaborators, strategic partners, or us claiming damages and seeking to enjoin commercial activities relating to the affected products and processes. The costs of litigating the claim could be substantial. Moreover, we cannot predict whether we, our collaborators, or strategic partners would prevail in any actions. In addition, if the relevant patent claims were upheld as valid and enforceable and our products or processes were found to infringe the patent or patents, we or our collaborators could be prevented from making, using, or selling the relevant product or process unless we or our collaborators could obtain a license or were able to design around the patent claims. We can give no assurance that such a license would be available to us and our collaborators on commercially reasonable terms, or at all, or that we would be able to successfully design around the relevant patent claims. There may be significant litigation in the genomics industry regarding patent and other intellectual property rights, which could subject us to litigation. If we become involved in litigation, it could consume a substantial portion of our managerial and financial resources.

We rely on trade secrets to protect technology where we believe patent protection is not appropriate or obtainable. Trade secrets, however, are difficult to protect. While we require employees, academic collaborators and consultants to enter into confidentiality

agreements, we may not be able to adequately protect our trade secrets or other proprietary information or enforce these confidentiality agreements.

Our collaborators, strategic partners, and scientific advisors have rights to publish data and information in which we may have rights. If we cannot maintain the confidentiality of our technology and other confidential information in connection with our collaborations and strategic partnerships, then we may not be able to receive patent protection or protect our proprietary information.

***If we are unable to obtain or protect intellectual property rights related to our product candidates, we may not be able to compete effectively in our markets.***

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our product candidates. The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates in the United States or in other foreign countries. There is no assurance that all of the potentially relevant prior art relating to our patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing from a pending patent application. Even if patents do successfully issue and even if such patents cover our product candidates, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed or invalidated. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our product candidates or prevent others from designing around our claims. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

If the patent applications we hold or have in-licensed with respect to our programs or product candidates fail to issue, if their breadth or strength of protection is threatened, or if they fail to provide meaningful exclusivity for our product candidates, it could dissuade companies from collaborating with us to develop product candidates, and threaten our ability to commercialize, future products. Several patent applications covering our product candidates have been filed recently. We cannot offer any assurances about which, if any, patents will issue, the breadth of any such patent or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Any successful opposition to these patents or any other patents owned by or licensed to us could deprive us of rights necessary for the successful commercialization of any product candidates that we may develop. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate under patent protection could be reduced. Since patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we were the first to file any patent application related to a product candidate. Furthermore, if third parties have filed such patent applications, an interference proceeding in the United States can be initiated by a third party to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after it is filed. Various extensions may be available however the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from generic medications.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our product candidate discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors.

Although we expect all of our employees and consultants to assign their inventions to us, and all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed or that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret. In addition, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all.

Further, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent material disclosure of the non-patented intellectual property related to our technologies to third parties, and there is no guarantee that we will have any such enforceable trade secret protection, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, results of operations and financial condition.

***Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts.***

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, *ex parte* reexaminations, post-grant review, and *inter partes* review proceedings before the U.S. Patent and Trademark Office, or U.S. PTO, and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are pursuing development candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of any of our product candidates, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire. Similarly, if any third-party patents were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy, the holders of any such patents may be able to block our ability to develop and commercialize the applicable product candidate unless we obtained a license or until such patent expires. In either case, such a license may not be available on commercially reasonable terms or at all.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

***We may not be successful in obtaining or maintaining necessary rights to gene therapy product components and processes for our development pipeline through acquisitions and in-licenses.***

Presently we have rights to the intellectual property, through licenses from third parties and under patents that we own, to develop our gene therapy product candidates. Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights. In addition, our product candidates may require specific formulations to work effectively and efficiently and these rights may be held by others. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities.

For example, we sometimes collaborate with U.S. and foreign academic institutions to accelerate our preclinical research or development under written agreements with these institutions. Typically, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such right of first negotiation for intellectual property, we may be unable to negotiate a license within the specified time frame or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our

investment. If we are unable to successfully obtain rights to required third-party intellectual property rights, our business, financial condition and prospects for growth could suffer.

***If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.***

We are a party to a number of intellectual property license agreements that are important to our business and expect to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that future license agreements will impose, various diligence, milestone, royalty and other obligations on us. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, the licensor may have the right to terminate the license, in which event we would not be able to market products covered by the license.

We may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates, and we have done so from time to time. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we may be required to expend significant time and resources to develop or license replacement technology. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could harm our business significantly. We cannot provide any assurances that third-party patents do not exist that might be enforced against our current product candidates or future products, resulting in either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties.

In many cases, patent prosecution of our licensed technology is controlled solely by the licensor. If our licensors fail to obtain and maintain patent or other protection for the proprietary intellectual property we license from them, we could lose our rights to the intellectual property or our exclusivity with respect to those rights, and our competitors could market competing products using the intellectual property. In certain cases, we control the prosecution of patents resulting from licensed technology. In the event we breach any of our obligations related to such prosecution, we may incur significant liability to our licensing partners. Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry. Disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

***We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful.***

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid, is unenforceable and/or is not infringed, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference proceedings provoked by third parties or brought by us may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

***Patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.***

On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to U.S. patent law, including provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. The U.S. PTO is currently developing regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first to file provisions, were enacted March 16, 2013. However, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

***We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.***

We employ individuals who were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any of our employee's former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

***We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.***

We may also be subject to claims that former employees, collaborators or other third parties have an ownership interest in our patents or other intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

***Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.***

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the U.S. PTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm and rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The U.S. PTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

***Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court.***

If we or one of our licensing partners initiated legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable.

In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including patent eligible subject matter, lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the U.S. PTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection would have a material adverse impact on our business.

***Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.***

As is the case with other biotechnology companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology industry involve both technological and legal complexity, and is therefore obtaining and enforcing biotechnology patents is costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the U.S. PTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

***We may not be able to protect our intellectual property rights throughout the world.***

Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

**Risks Relating to our Business Operations**

***If we use biological and hazardous materials in a manner that causes injury or violates laws, we may be liable for damages.***

Our research and development activities involve the controlled use of potentially harmful biological materials as well as hazardous materials, chemicals, and various radioactive compounds typically employed in molecular and cellular biology. We routinely use cells in culture and gene delivery vectors, and we employ small amounts of radioisotopes in trace experiments. Although we maintain up-to-date licensing and training programs, we cannot completely eliminate the risk of accidental contamination or injury from the use, storage, handling, or disposal of these materials. In the event of contamination or injury, we could be held liable for

damages that result, and any liability could exceed our resources. We currently carry insurance covering certain claims arising from our use of these materials. However, if we are unable to maintain our insurance coverage at a reasonable cost and with adequate coverage, our insurance may not cover any liability that may arise. We are subject to federal, state, and local laws and regulations governing the use, storage, handling, and disposal of these materials and specified waste products.

***Failure to attract, retain, and motivate skilled personnel and cultivate key academic collaborations will delay our product development programs and our research and development efforts.***

Our success depends on our continued ability to attract, retain, and motivate highly qualified management and scientific personnel and our ability to develop and maintain important relationships with leading research and academic institutions and scientists. Competition for skilled and qualified personnel and academic and other research collaborations is intense. If we lose the services of personnel with the necessary skills, including the members of our senior management team, it could significantly impede the achievement of our research and development objectives. If we fail to negotiate additional acceptable collaborations with academic and other research institutions and scientists, or if our existing collaborations are unsuccessful, our development programs may be delayed or may not succeed.

***Third parties on which we rely and we may be adversely affected by natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.***

Natural disasters could severely disrupt our operations and have a material adverse effect on our business, financial condition, results of operations and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place currently are limited and may not prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

***Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs.***

Our internal computer systems and those of our current and any future collaborators and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our product candidates could be delayed.

**Risks Relating to our Common Stock and Corporate Organization**

***Our stock price has been volatile and may continue to be volatile, which could result in substantial losses for investors.***

Our stock price has been volatile and may continue to be volatile, which could cause stockholders to incur substantial losses. An active public market for our common stock may not be sustained, and the market price of our common stock may continue to be highly volatile. The market price of our common stock has fluctuated significantly in response to various factors, some of which are beyond our control, including but not limited to the following:

- announcements by us or collaborators providing updates on the progress or development status of product candidates;
- data from clinical trials;
- initiation or termination of clinical trials;
- changes in market valuations of similar companies;
- overall market and economic conditions, including the equity markets for emerging biotechnology companies;
- deviations in our results of operations from the guidance given by us;

- announcements by us or our competitors of new or enhanced products, technologies or services or significant contracts, acquisitions, strategic relationships, joint ventures or capital commitments;
- announcement of changes in business and operations by our collaborators and partners, or changes in our existing collaboration agreements;
- regulatory developments;
- changes, by one or more of our security analysts, in recommendations, ratings or coverage of our stock.
- additions or departures of key personnel;
- future sales of our common stock or other securities by us, management or directors, liquidation of institutional funds that comprised large holdings of our stock; and
- decreases in our cash balances.

***Actual or potential sales of our common stock by our employees, including our executive officers, pursuant to pre-arranged stock trading plans could cause our stock price to fall or prevent it from increasing for numerous reasons, and actual or potential sales by such persons could be viewed negatively by other investors.***

In accordance with the guidelines specified under Rule 10b5-1 of the Securities Exchange Act of 1934, as amended, and our policies regarding stock transactions, a number of our employees, including executive officers and members of our board of directors, have adopted and may continue to adopt stock trading plans pursuant to which they have arranged to sell shares of our common stock from time to time in the future. Generally, sales under such plans by our executive officers and directors require public filings. Actual or potential sales of our common stock by such persons could cause the price of our common stock to fall or prevent it from increasing for numerous reasons.

***Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.***

Additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. These sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

***Our stock price is also influenced by public perception of gene therapy and government regulation of potential products.***

Reports of serious adverse events in a retroviral gene transfer trial for infants with X-linked severe combined immunodeficiency (X-linked SCID) in France and subsequent FDA actions putting related trials on hold in the United States had a significant negative impact on the public perception and stock price of certain companies involved in gene therapy. Stock prices of these companies declined whether or not the specific company was involved with retroviral gene transfer for the treatment of infants with X-linked SCID, or whether the specific company's clinical trials were placed on hold in connection with these events. Other potential adverse events in the field of gene therapy may occur in the future that could result in greater governmental regulation of our potential products and potential regulatory delays relating to the testing or approval of our potential products. These external events may have a negative impact on public perception of our business, which could cause our stock price to decline.

***We may be subject to claims for rescission and may be subject to other penalties for shares sold under the ATM Agreement.***

We are a party to an Amended and Restated At-the-Market Offering Program Sales Agreement, or the ATM Agreement, pursuant to which we may sell, from time to time, an aggregate of $75 million of our common stock through the investment bank acting as our sales agent under the ATM Agreement. The shares under the original At-the-Market Offering Program Sales Agreement entered into with the sales agent in December 2016 were initially to be sold pursuant to a shelf registration statement on Form S-3 that initially became effective in February 2014, or the prior registration statement. In March 2017, we sold an aggregate of $3.8 million of our common stock, and received net proceeds of $3.4 million, under the ATM Agreement at an average price per share of $4.39, and at the times of those sales, we believed that the prior registration statement was then effective. However, subsequent to those sales, we were advised that the prior registration statement had in fact expired prior to the time of the sales in March 2017 ATM sales. Because our registration statement had in fact expired prior to the time of such sales, we may be deemed to have violated Section 5 of

the Securities Act, which requires registration of public offerings of securities. Consequently, we may be subject to claims for rescission by purchasers who purchased shares of our common stock under the ATM Agreement in March 2017. Under Section 12(a)(1) of the Securities Act, a purchaser of security in a transaction made in violation of Section 5 of the Securities Act may obtain recovery of the consideration paid in connection with its purchase, plus statutory interest, or, if it had already sold the shares, recover damages resulting from its purchase. While we believe it is unlikely that a successful claim will be asserted against us by any purchasers who purchased shares of our common stock under the ATM Agreement in March 2017, we cannot guarantee that no such legal claims will be asserted against us by any purchasers. In addition, we could become subject to enforcement actions and/or penalties and fines by federal authorities, and we are unable to predict the likelihood of any such enforcement actions being brought against us, or the amount of any such potential penalties or fines.

***If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.***

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. In the event securities or industry analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

***We do not intend to pay dividends on our common stock so any returns will be limited to the value of our stock.***

We have never declared or paid any cash dividends on our common stock. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any return to stockholders will therefore be limited to the appreciation of their stock.

***Anti-takeover provisions in our certificate of incorporation and Delaware law could make an acquisition of our company more difficult and could prevent attempts by our stockholders to remove or replace current management.***

Anti-takeover provisions of Delaware law and in our certificate of incorporation and our bylaws may discourage, delay or prevent a change in control of our company, even if a change in control would be beneficial to our stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. In particular, under our certificate of incorporation our board of directors may issue up to 5,000,000 shares of preferred stock with rights and privileges that might be senior to our common stock, without the consent of the holders of the common stock. Moreover, without any further vote or action on the part of the stockholders, the board of directors would have the authority to determine the price, rights, preferences, privileges, and restrictions of the preferred stock. This preferred stock, if it is ever issued, may have preference over, and harm the rights of, the holders of common stock. Although the issuance of this preferred stock would provide us with flexibility in connection with possible acquisitions and other corporate purposes, this issuance may make it more difficult for a third party to acquire a majority of our outstanding voting stock.

Similarly, our authorized but unissued common stock is available for future issuance without stockholder approval. Our certificate of incorporation further provides that stockholders may not take action by written consent.

In addition, our amended and restated bylaws, as amended:

- establish advance notice requirements for nominations for election to the board of directors or proposing matters that can be acted upon at stockholders' meetings; and
- prohibit stockholders from calling a special meeting of stockholders.

We are also subject to Section 203 of the Delaware General Corporation Law, which provides, subject to certain exceptions, that if a person acquires 15% of our voting stock, the person is an "interested stockholder" and may not engage in "business combinations" with us for a period of three years from the time the person acquired 15% or more or our voting stock. The application of Section 203 may, in some circumstances, deter or prevent a change in control of our company even when such change may be beneficial to our stockholders.

***Our amended and restated bylaws, as amended, provide that the Court of Chancery of the State of Delaware will be the exclusive forum for the adjudication of certain disputes, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.***

Our amended and restated bylaws, as amended, provide that the Court of Chancery of the State of Delaware is the sole and exclusive forum for:

- any derivative action or proceeding brought on our behalf;
- any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of Sangamo to us or our stockholders;
- any action asserting a claim arising pursuant to any provision of the General Corporation Law of the State of Delaware,; and
- any action asserting a claim governed by the internal affairs doctrine.

This provision further provides that any person or entity that acquires any interest in shares of our capital stock will be deemed to have notice of and consented to the provisions of such provision.

This provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers, and other employees. If a court were to find this provision to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could seriously harm our business.

**ITEM 1B – UNRESOLVED STAFF COMMENTS**

None.

**ITEM 2 – PROPERTIES**

Our corporate headquarters occupies approximately 45,600 square feet of research and office space located in Richmond, California, subject to leases that expire beginning in August 2019 through July 2021. We also have a build-to-suit lease located in Richmond, California to occupy approximately 41,400 square feet of space that expires in December 2021. We also have a build-to-suit lease located in Brisbane, California to occupy approximately 87,700 square feet of space that expires in May 2029 which we plan to use for our new corporate headquarters by the end of 2018.

**ITEM 3 – LEGAL PROCEEDINGS**

We are not a party to any material pending legal proceeding. From time to time, we may be involved in legal proceedings arising in the ordinary course of business.

**ITEM 4 – MINE SAFETY DISCLOSURES**

Not Applicable.

## PART II

### ITEM 5 – MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock has traded on the Nasdaq Stock Market under the symbol "SGMO" since our initial public offering on April 6, 2000.

The high and low closing prices of our common stock for each quarterly period during the last two fiscal years as reported by the Nasdaq Global Select Market were as follows:

**Common Stock**

| | Price | |
|---|---|---|
| | High | Low |
| Year ended December 31, 2017 | | |
| Fourth Quarter | $ 17.35 | $ 11.60 |
| Third Quarter | $ 15.00 | $ 8.40 |
| Second Quarter | $ 9.35 | $ 4.05 |
| First Quarter | $ 5.20 | $ 3.10 |
| Year ended December 31, 2016 | | |
| Fourth Quarter | $ 4.74 | $ 2.70 |
| Third Quarter | $ 6.84 | $ 4.13 |
| Second Quarter | $ 7.50 | $ 5.14 |
| First Quarter | $ 8.95 | $ 4.91 |

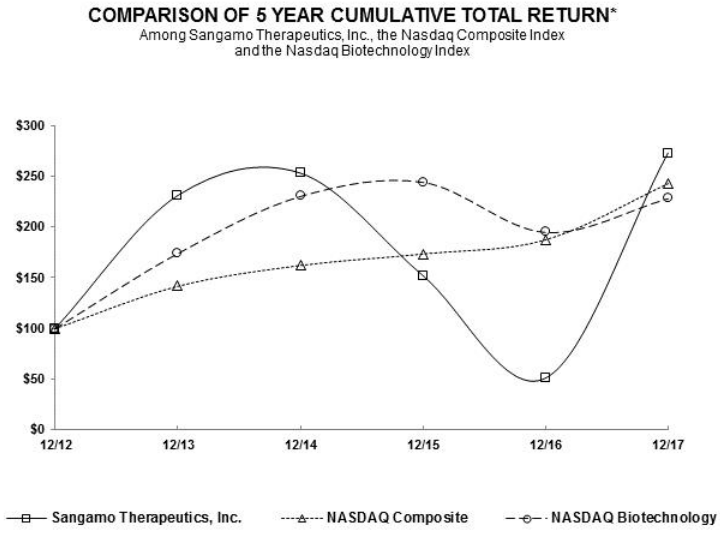
**Holders**

As of February 15, 2018, there were 57 holders of record of our common stock. This number does not include "street name" or beneficial holders, whose shares are held of record by banks, brokers, financial institutions and other nominees.

**Dividends**

We have not paid dividends on our common stock, and currently do not plan to pay any cash dividends in the foreseeable future.

**Stock Performance Graph**




*The above Stock Performance Graph and related information shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that the Company specifically incorporates it by reference into such filing.*

**ITEM 6 – SELECTED FINANCIAL DATA**

The following Selected Financial Data should be read in conjunction with “Item 7—Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Item 8—Financial Statements and Supplementary Data” included elsewhere in this Annual Report on Form 10-K.

**Selected Financial Data**

| | Year Ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2017 | 2016 | 2015 | 2014 | 2013 |
| | (In thousands, except per share data) | | | | |
| **Statement of Operations Data:** | | | | | |
| Total revenues | $ 36,567 | $ 19,389 | $ 39,539 | $ 45,870 | $ 24,133 |
| Operating expenses: | | | | | |
| Research and development | 65,728 | 65,618 | 67,198 | 56,974 | 37,039 |
| General and administrative | 27,200 | 26,330 | 19,197 | 15,677 | 13,800 |
| Total operating expenses | 92,928 | 91,948 | 86,395 | 72,651 | 50,839 |
| Loss from operations | (56,361) | (72,559) | (46,856) | (26,781) | (26,706) |
| Other income/(expense) | 1,793 | 887 | 431 | 364 | 82 |
| Benefit from income taxes | — | 14 | 5,722 | — | — |
| Net loss | $ (54,568) | $ (71,658) | $ (40,703) | $ (26,417) | $ (26,624) |
| Basic and diluted net loss per share | $ (0.70) | $ (1.02) | $ (0.58) | $ (0.39) | $ (0.48) |
| Shares used in computing basic and diluted net loss per share | 78,084 | 70,553 | 69,757 | 67,022 | 55,974 |

| | As of December 31, | | | | |
|---|---|---|---|---|---|
| | 2017 | 2016 | 2015 | 2014 | 2013 |
| | (In thousands) | | | | |
| **Balance Sheet Data:** | | | | | |
| Cash, cash equivalents, marketable securities, and interest receivable | $ 244,560 | $ 142,759 | $ 209,307 | $ 226,645 | $ 131,814 |
| Working capital | 203,538 | 136,289 | 192,485 | 169,997 | 87,143 |
| Total assets | 286,741 | 157,891 | 217,235 | 243,212 | 140,838 |
| Accumulated deficit | (495,479) | (440,911) | (369,253) | (328,550) | (302,133) |
| Total stockholders' equity | 187,900 | 136,195 | 192,439 | 206,633 | 121,710 |

## ITEM 7 – MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The discussion in "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains trend analysis, estimates and other forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements include, without limitation, statements containing the words "believes," "anticipates," "expects," "continue," and other words of similar import or the negative of those terms or expressions. Such forward-looking statements are subject to known and unknown risks, uncertainties, estimates and other factors that may cause the actual results, performance or achievements of the Company, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Actual results could differ materially from those set forth in such forward-looking statements as a result of, but not limited to, the "Risk Factors" described in Part I, Item 1A. You should read the following discussion and analysis along with the "Selected Financial Data" and the financial statements and notes attached to those statements included elsewhere in this report.

### Overview

We are a clinical stage biotechnology company focused on translating ground-breaking science into genomic therapies that transform patients' lives using our industry-leading platform technologies in genome editing, gene therapy, gene regulation and cell therapy.

We are a leader in the research and development of zinc finger proteins, or ZFPs, a naturally occurring class of proteins found in humans. We have used our knowledge and expertise to develop a proprietary technology platform in both genome editing and gene regulation. ZFPs can be engineered to make zinc finger nucleases, or ZFNs, proteins that can be used to specifically modify DNA sequences by adding or knocking out specific genes, or genome editing, and ZFP transcription factors or ZFP TFs, proteins that can be used to increase or decrease gene expression, or gene regulation. In the process of developing this platform, we have accrued significant scientific, manufacturing and regulatory capabilities and know-how that are generally applicable in the broader field of gene therapy and have capitalized this knowledge into a conventional gene therapy platform based on adeno-associated viral vector, or AAV, cDNA gene transfer.

Our strategy is to maximize the value and therapeutic use of our technology platforms. In certain therapeutic areas we intend to capture the value of our proprietary genome editing and gene therapy products by forward integrating into manufacturing, development and commercial operations. In other therapeutic areas we intend to partner with biopharmaceutical companies to develop products.

We are focused on the development of human therapeutics for diverse diseases with well-characterized genetic causes. We have several proprietary clinical and preclinical product candidates in development and have strategically partnered certain programs with biopharmaceutical companies to obtain funding for our own programs and to expedite clinical and commercial development.

We have an ongoing Phase 1/2 clinical trial evaluating SB-525, a gene therapy for the treatment of hemophilia A, a blood disorder. We have ongoing Phase 1/2 clinical trials evaluating three product candidates using our proprietary *in vivo* genome editing approach: SB-FIX, for the treatment of hemophilia B, a blood disorder, SB-318, for the treatment of Mucopolysaccharidosis Type I, or MPS I, and SB-913 for the treatment of Mucopolysaccharidosis Type II, or MPS II. MPS I and MPS II are rare lysosomal storage disorders, or LSDs. We are also initiating a Phase 1/2 clinical trial evaluating ST-400, developed using our proprietary ZFN-mediated *ex vivo* cell therapy platform, for the treatment of beta-thalassemia, a blood disorder. In addition, we have proprietary preclinical and discovery stage programs in other LSDs and monogenic diseases, including certain central nervous system disorders, cancer immunotherapy, immunology and infectious disease.

In February 2018, we entered into a global collaboration and license agreement with Kite Pharma, Inc., or Kite, a wholly-owned subsidiary of Gilead Sciences, Inc., or Gilead, for the research, development and commercialization of potential engineered cell therapies for cancer. In this collaboration, we will work together with Kite on a research program under which we will design ZFNs and AAVs to disrupt and insert certain genes in T cells and natural killer, or NK, cells, including the insertion of genes that encode chimeric antigen receptors, or CARs, T-cell receptors, or TCRs and NK-cell receptors, or NKRs, directed to mutually agreed targets. Kite will be responsible for all clinical development and commercialization of any resulting products.

In May 2017, we entered into a global collaboration and license agreement with Pfizer Inc., or Pfizer, for the research, development and commercialization of SB-525, our gene therapy product candidate for hemophilia A, and closely related products. Under this agreement, we are responsible for conducting the Phase 1/2 clinical trial and certain manufacturing activities for SB-525, while Pfizer is responsible for subsequent worldwide development, manufacturing, marketing and commercialization of SB-525. We and Pfizer may also collaborate in the research and development of additional AAV-based gene therapy products for hemophilia A.

In December 2017, we entered into a new research collaboration and license agreement with Pfizer for the development and commercialization of potential gene therapy products that use ZFP TFs to treat amyotrophic lateral sclerosis, or ALS, and frontotemporal lobar degeneration, or FTLD, linked to mutations of the *C9ORF72* gene. Under this agreement, we are working with Pfizer on a research program to identify, characterize and preclinically develop ZFP TFs that satisfy pre-agreed criteria. Pfizer is responsible for subsequent development, manufacturing and commercialization of licensed products.

We have also established a collaborative partnership with Bioverativ, Inc., or Bioverativ, to research, develop and commercialize therapeutic gene-edited cell therapy products in hemoglobinopathies, including beta-thalassemia and sickle cell disease, or SCD. We expect to begin enrolling patients in a Phase 1/2 clinical study in the first half of 2018. Bioverativ is responsible for subsequent development, manufacturing and commercialization of licensed products.

We have incurred net losses since inception and expect to incur losses in the future as we continue our research and development activities. To date, we have funded our operations primarily through the issuance of equity securities, revenues from corporate collaborations and research grants.

Our revenues have consisted primarily of revenues from our corporate partners for zinc finger nuclease, or ZFN, and zinc finger protein transcription factor, or ZFP TF, programs, contractual payments from strategic partners for research services and research milestones, and research grant funding. We expect revenues will continue to fluctuate from period to period and there can be no assurance that new collaborations or partner funding will continue beyond their initial terms or that we are able to meet the milestones specified in these agreements.

We expect to continue to devote substantial resources to research and development in the future and expect research and development expenses to increase in the next several years if we are successful in advancing our gene therapy and our genome editing programs in the clinic and if we are able to progress our earlier stage product candidates into clinical trials. Pursuant to the terms of the agreements with Kite and Bioverativ, certain expenses related to research and development activities will be reimbursed to us. The reimbursement funds to be received from Kite and Bioverativ will be recognized as revenue as the costs are incurred and collection is reasonably assured.

General and administrative expenses consist primarily of salaries and personnel related expenses for executive, finance and administrative personnel, stock-based compensation expenses, professional fees, allocated facilities expenses, patent prosecution expenses and other general corporate expenses. As we continue to advance our product candidates into and through the clinic, we expect the growth of our business to require increased general administrative expenses.

For the year ended December 31, 2017, we incurred a consolidated net loss of $54.6 million, or $0.70 per share, compared to a consolidated net loss of $71.7 million, or $1.02 per share, for the same period in 2016. As of December 31, 2017, we had cash, cash equivalents, marketable securities and interest receivable totaling $244.6 million compared to $142.8 million as of December 31, 2016. As of December 31, 2017, we had an accumulated deficit of $495.5 million.

**Critical Accounting Policies and Estimates**

The accompanying discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements and the related disclosures, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts in our consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe the following policies to be the most critical to an understanding of our financial condition and results of operations because they require us to make estimates, assumptions and judgments about matters that are inherently uncertain.

***Revenue Recognition***

Revenues from research activities made under strategic partnering agreements and collaborations are recognized as the services are provided when there is persuasive evidence that an arrangement exists, delivery has occurred, the price is fixed or determinable, and collectability is reasonably assured. Revenue generated from research and licensing agreements typically includes upfront signing or license fees, cost reimbursements, research services, minimum sublicense fees, milestone payments and royalties on future licensee's product sales.

*Multiple Element Arrangements prior to the adoption of ASU No. 2009-13, Revenue Recognition – Multiple Deliverable Revenue Arrangements (ASU 2009-13).* For revenue arrangements entered into before January 1, 2011 that include multiple deliverables, the elements of such agreement were divided into separate units of accounting if the deliverables met certain criteria,

including whether the fair value of the delivered items could be determined and whether there was evidence of fair value of the undelivered items. In addition, the consideration was allocated among the separate units of accounting based on their fair values, and the applicable revenue recognition criteria are considered separately for each of the separate units of accounting. Prior to the adoption of ASU 2009-13, we recognized nonrefundable signing, license or non-exclusive option fees as revenue when rights to use the intellectual property related to the license were delivered and over the period of performance obligations if we had continuing performance obligations. We estimated the performance period at the inception of the arrangement and reevaluated it each reporting period. Changes to these estimates were recorded on a prospective basis.

*Multiple Element Arrangements after the adoption of ASU 2009-13.* ASU 2009-13 amended the accounting standards for certain multiple element revenue arrangements to:

- provide updated guidance on whether multiple elements exist, how the elements in an arrangement should be separated, and how the arrangement consideration should be allocated to the separate elements;
- require an entity to allocate arrangement consideration to each element based on a selling price hierarchy, also called the relative selling price method, where the selling price for an element is based on vendor-specific objective evidence, or VSOE, if available; third-party evidence, or TPE, if available and VSOE is not available; or the best estimate of selling price, or ESP, if neither VSOE nor TPE is available; and
- eliminate the use of the residual method and require an entity to allocate arrangement consideration using the selling price hierarchy.

For revenue agreements with multiple element arrangements, such as license and development agreements, entered into on or after January 1, 2011, we allocate revenue to each non-contingent element based on the relative selling price of each element. When applying the relative selling price method, we determine the selling price for each deliverable using VSOE of selling price or TPE of selling price. If neither exists, we use ESP for that deliverable. Revenue allocated is then recognized when the basic four revenue recognition criteria are met for each element. The collaboration and license agreements entered into with Shire in 2012, Biogen in 2014, and Pfizer in May and December of 2017 were evaluated under these accounting standards.

Additionally, we recognize milestone payments, which are subject to substantive contingencies, upon completion of specified milestones, which represents the culmination of an earnings process, according to contract terms. Fees from licensees upon sublicensing our technologies by them to third parties (sublicense fees) are recognized as revenue in the period such fees are due. Minimum annual sublicense fees are also recognized as revenue in the period in which such fees are due. Royalty revenues are generally recognized when earned and collectability of the related royalty payment is reasonably assured. We recognize cost reimbursement revenue under collaborative agreements as the related research and development costs for services are rendered. Deferred revenue represents the portion of research or license payments received which a portion has not been earned.

Our research grants are typically multi-year agreements and provide for the reimbursement of qualified expenses for research and development as defined under the terms of the grant agreement. Revenue under grant agreements is recognized when the related qualified research expenses are incurred.

In May 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, 2014-09, *Revenue from Contracts with Customers (Topic 606)*, or ASC 606. This standard outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The main principle of ASU 2014-09 is to recognize revenues when promised goods or services are transferred to customers in an amount that reflects the consideration that is expected to be received for those goods or services. ASU 2014-09 provides companies with two implementation methods: (i) apply the standard retrospectively to each prior reporting period presented (full retrospective application); or (ii) apply the standard retrospectively with the cumulative effect of initially applying the standard as an adjustment to the opening balance of retained earnings of the annual reporting period that includes the date of initial application (modified retrospective application). This guidance is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. Under ASU 2014-09, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASU 2014-09, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. ASU 2014-09 also impacts certain other areas, such as the accounting for costs to obtain or fulfill a contract.

The Company will adopt ASC 606 during the first quarter of 2018 and using the modified retrospective method. The Company has substantially completed its evaluation of the impact of adopting ASC 606 on its contracts with Bioverativ, Shire, DAS, and Sigma (as defined below). The Company’s performance obligations with respect to Shire, DAS and Sigma were substantially complete at

December 31, 2017 and any future receipts are contingent upon these counterparties achieving specified development, commercial, and/or sales targets and would be in the form of milestones or royalties, all of which management concluded are constrained at December 31, 2017 as defined under ASC 606. The Company has also performed an assessment of the impact of adopting ASC 606 on its Bioverativ collaboration arrangement and has preliminarily concluded that the timing of the recognition of up-front payments and research and development reimbursements will be decelerated under the new guidance while development and commercialization milestones are constrained at December 31, 2017, as defined under ASC 606. Based on this assessment, management has preliminarily concluded that the transition adjustment to be recognized on January 1, 2018 will be less than $5.0 million and will result in a decrease to accumulated deficit and an increase to deferred revenue at that date as a result of decelerating the recognition of amounts related to research and development reimbursements and up-front payments under ASC 606.

The Company has not completed its assessment of the effect that the adoption of ASC 606 will have on its agreements with Pfizer that were entered into during 2017. The Company has preliminarily concluded that any potential milestone and royalty payments payable under these agreements are constrained at December 31, 2017, as defined under ASC 606, and thus will not result in a change upon adoption of ASC 606 from the accounting for such payments under ASC 605. No revenue or other amounts were recognized in 2017 related to the agreement that was entered into with Pfizer in late December 2017 and, accordingly, management does not expect any amounts to be recognized as part of the January 2018 transition adjustment related to this agreement. During 2017, the Company recognized as revenue $17.0 million of the $70.0 million up-front payment received from agreement the Company entered into with Pfizer in May 2017, the amount and timing of which may change upon adoption of ASC 606.

The estimated impact from the adoption of ASU 2014-09 represent management's best estimates at the time of the preparation of this Annual Report on Form 10-K. The actual, final quantitative effects of the adoption of ASU 2014-09 are subject to change from these estimates and such change may be significant, pending the completion of our assessment in the first quarter of 2018.

***Research and Development Expenses***

We recognize research and development expenses as incurred. Research and development expenses consist of direct and research-related allocated overhead costs such as facilities costs, salaries and related personnel costs, and material and supply costs. In addition, research and development expenses include costs related to clinical trials, validation of our testing processes and procedures and related overhead expenses. Research and development costs incurred in connection with collaborator-funded activities are expensed as incurred. Costs to acquire technologies that are utilized in research and development that have no alternative future use are expensed as incurred. Expenses resulting from clinical trials are recorded when incurred based in part on factors such as estimates of work performed, patient enrollment, progress of patient studies and other events. We make good faith estimates that we believe to be accurate, but the actual costs and timing of clinical trials are highly uncertain, subject to risks and may change depending upon a number of factors, including our clinical development plan.

***Stock-Based Compensation***

We measure and recognize compensation expense for all stock-based payment awards made to our employees and directors, including employee stock options, employee stock purchases related to our Employee Stock Purchase Plan, or ESPP, and restricted stock units, or RSUs, on estimated fair values. The fair value of stock-based awards is amortized over the vesting period of the award using a straight-line method over the requisite service period.

To estimate the value of a stock option award and purchases related to ESPP, we use the Black-Scholes option pricing model. This model requires inputs such as expected life, expected volatility and risk-free interest rate. These inputs are subjective and generally require significant analysis and judgment to develop. While estimates of expected life and volatility are derived primarily from our historical data, the risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant commensurate with the expected life assumption. To estimate the value of RSUs, we use the closing market value of our common stock on the date the award is issued. Further, we account for forfeitures as they occur under our adoption of ASU 2016-09. If factors change and different assumptions are employed in determining the fair value of stock-based awards, the stock-based compensation expense recorded in future periods may differ significantly from what was recorded in the current period.

**Results of Operations**

***Years Ended December 31, 2017, 2016 and 2015***

***Revenues***

| | Year Ended December 31, | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | Change | % Change | 2016 | 2015 | Change | % Change |
| | (In thousands, except percentage values) | | | | | | | |
| Revenues: | | | | | | | | |
| Collaboration agreements | $ 35,960 | $ 18,881 | $ 17,079 | 90% | $ 18,881 | $ 37,844 | $ (18,963) | (50%) |
| Research Grants | 607 | 508 | 99 | 19% | 508 | 1,695 | (1,187) | (70%) |
| Total revenues | $ 36,567 | $ 19,389 | $ 17,178 | 89% | $ 19,389 | $ 39,539 | $ (20,150) | (51%) |

Total revenues consisted of revenues from collaboration agreements and research grants. We anticipate revenues over the next several years will be derived primarily from our collaboration agreements with Kite, Pfizer and Bioverativ.

The increase in revenues from collaborations in 2017 compared to 2016 was primarily due to increases of $17.0 million in revenues related to the hemophilia A Pfizer agreement, $3.4 million from the upfront license payment and research services provided to Bioverativ, partially offset by decreases of $2.1 million in royalty revenue related to our DAS license, $0.8 million related to research services provided to Shire, and $0.5 million in Sigma license and royalty fees. During 2017, revenues related to our collaborative agreements with Pfizer and Bioverativ represented 47% and 34%, respectively, of total revenues.

The decrease in revenues from collaborations in 2016 compared to 2015 was primarily due to decreases of $12.5 million in revenues related to Shire research services, $5.0 million in revenues related to Bioverativ research services, and $3.6 million in Sigma license and royalty fees, partially offset by an increase of $2.1 million in royalty revenue related to our DAS license. During 2016, revenues related to our collaborative agreements with Bioverativ, DAS and Shire represented 46%, 26% and 17%, respectively, of total revenues.

Research grant revenues were $0.6 million, $0.5 million, and $1.7 million in 2017, 2016, and 2015, respectively. There were no significant changes in grant revenue from 2016 to 2017. The decrease of $1.2 million in 2016 from 2015 was primarily due to the receipt of funding from a research grant from CIRM for our beta-thalassemia project in 2015.

***Operating Expenses***

| | Year Ended December 31, | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | Change | % Change | 2016 | 2015 | Change | % Change |
| | (In thousands, except percentage values) | | | | | | | |
| Operating expenses: | | | | | | | | |
| Research and development | $ 65,728 | $ 65,618 | $ 110 | 0% | $ 65,618 | $ 67,198 | $ (1,580) | (2%) |
| General and administrative | 27,200 | 26,330 | 870 | 3% | 26,330 | 19,197 | 7,133 | 37% |
| Total expenses | $ 92,928 | $ 91,948 | $ 980 | 1% | $ 91,948 | $ 86,395 | $ 5,553 | 6% |

*Research and Development Expenses*

The increase of $0.1 million in research and development expenses in 2017 was primarily due to increases of $5.5 million in salaries and benefits, $1.1 million in clinical trial and manufacturing expenses related to our hemophilia B and MPS programs, and $1.1 million in facility and operating expenses. This was primarily offset by decreases of $3.4 million in preclinical expenses, $2.5 million in lab supply expenses, $1.4 million in stock-based compensation expense, and $0.3 million in other professional services.

The decrease of $1.6 million in research and development expenses in 2016 was primarily due to decreases of $5.6 million in research expenses related to our preclinical programs, and $0.7 million in license expense. This was primarily offset by increases of $2.0 million in personnel related expenses, including salaries and stock-based compensation expense due to increased headcount, $1.8 million in consulting expenses, $0.6 million in facilities expense, and $0.5 million in lab supply expenses, in each case as we prepared to enter the clinic in 2016.

The table below shows research and development expenses related to our clinical and preclinical programs.

| Programs | Year Ended December 31, (In thousands) 2017 | 2016 | 2015 |
|---|---|---|---|
| Human Therapeutic Programs | | | |
| Hemophilia clinical programs | $ 14,715 | $ 7,521 | $ 102 |
| LSD clinical programs | 11,428 | 9,046 | — |
| Beta-thalassemia clinical program | 11,354 | — | — |
| HIV (SB-728) clinical programs | 2,473 | 4,271 | 7,654 |
| Non-human Therapeutic Programs | | | |
| Preclinical and research programs | 25,414 | 43,682 | 56,513 |
| Other clinical programs and non-therapeutic programs | 344 | 1,098 | 2,929 |
| Total research and development expenses | $ 65,728 | $ 65,618 | $ 67,198 |

*General and Administrative Expenses*

The increase of $0.9 million in 2017 was primarily due to increases of $1.5 million in legal expenses, $1.5 million in corporate expenses, including rebranding in connection with our name change, $1.0 million in salaries and benefits, and $1.0 million in facility expenses. This increase was primarily offset by a decrease of $4.5 million in stock-based compensation expense, as 2016 included approximately $4.1 million of stock-based compensation expense recognized in connection with the transition of our former chief executive officer.

The increase of $7.1 million in 2016 was primarily due to an increase of $6.2 million in personnel related expenses, including $4.1 million in stock-based compensation expense and $2.0 million in salaries and benefits associated with the transition of our chief executive officer in June 2016, and an increase of $1.5 million for professional services, primarily offset by a decrease of $0.6 million in legal expenses.

***Interest and other income, net***

Interest and other income, net, was $1.8 million in 2017, $0.9 million in 2016 and $0.4 million in 2015 and primarily consisted of interest income resulting from our treasury strategy.

***Benefit from income taxes***

Benefit from income taxes was $0.0 million, $0.0 million, and $5.7 million for 2017, 2016, and 2015, respectively. We recognized an immaterial amount of income tax expense/benefit during both 2017 and 2016. The income tax benefit in 2015 was primarily due to $5.0 million income tax benefit recognized from a claims settlement with certain institutional investors that were beneficial owners of our common stock related to the disgorgement of short swing profits pursuant to Section 16 of the Securities Exchange Act of 1934, as amended.

As of December 31, 2017, we had net operating loss carryforwards for federal and state income tax purposes of approximately $475.0 million and $142.0 million, respectively. If not utilized, the net federal and state operating loss carryforwards will expire in 2018 and 2017, respectively. We also have federal and state research tax credit carryforwards of $10.8 million and $11.8 million, respectively. The federal research credits will begin to expire in 2018 while the state research credits have no expiration date. Utilization of our net operating loss carryforwards and research tax credit carryforwards may be subject to substantial annual limitations due to the ownership change limitations provided by the Internal Revenue Code and similar state provisions. The annual limitation could result in the expiration of the net operating loss carryforwards and research tax credit carryforwards before use. Due to the carryforwards related to the net operating losses and research and development tax credits, we do not expect to pay any taxes related to income in the near future.

On December 22, 2017, President Trump signed the Tax Cuts and Jobs Act ("Tax Reform") into legislation. The Tax Reform makes significant changes to the US corporate income tax law including, but not limited to, (1) reducing the U.S. federal corporate tax rate to 21% from 35% and (2) requiring a one-time mandatory transition tax on previously deferred foreign earnings of US subsidiaries. Under ASC 740, the effects of changes in tax rates and laws are recognized in the period in which the new legislation is enacted. In the case of US federal income taxes, the enactment date is the date the bill becomes law. With respect to this legislation, we expect no financial statement impact due to the Company's valuation allowance. The Company performed a re-measurement of deferred tax assets and liabilities as a result of the decrease in the corporate Federal income tax rate from 35% to 21%. In addition to

the reduction of U.S. federal corporate tax rate, the Company has also considered the impact of the foreign transition tax for which it has estimated that it would not need to accrue any amounts.

In December 2017, the Securities and Exchange Commission staff issued Staff Accounting Bulletin No.118 (SAB 118) to provide guidance on the application of the Tax Reform when a company does not have the necessary information available, prepared, or analyzed in reasonable to detail to reflect the effects of the Tax Reform. SAB 118 provides guidance for companies under the three scenarios (1) measurement of certain income tax effects is complete, (2) measurement of certain income tax effect can be reasonably estimated, and (3) measurement of certain income tax effects cannot be reasonably estimated. Companies are to complete the accounting under ASC 740 in regards to the Tax Reform within a measurement period that does not extend one year from the date of enactment (i.e., December 22, 2018). In accordance with SAB 118, companies must reflect the tax effects of the Tax Reform for which the accounting under 740 is complete. If certain income tax effect can be reasonably estimated, then the companies must report provisional amounts in the reporting period in which the companies can determine the reasonable estimate during the measurement period. In the case that certain income tax effects cannot be reasonably estimated, companies do not have to report effects of the Tax Reform. However, they should continue to apply ASC 740 based on the rules before the enactment of the Tax Reform and report any income tax effects in the first reporting period in which reasonable estimates become available.

We expect the new law to significantly reduce our tax rate in future periods, and our tax footnote reflects the effects of a Federal tax rate reduction net of our valuation allowance, which resulted in a net overall reduction of $0.

The final transition impacts of the Tax Act may differ from the above estimate, possibly materially, due to, among other things, changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act, any changes in accounting standards for income taxes or related interpretations in response to the Tax Act, or any updates or changes to estimates the company has utilized to calculate the transition impacts, including impacts from changes to current year earnings estimates and foreign exchange rates of foreign subsidiaries. In accordance with SAB 118, the Company is allowed a measurement period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. We currently anticipate finalizing and recording any resulting adjustments by year ending December 31, 2018.

**Liquidity and Capital Resources**

*Liquidity*

Since inception, we have incurred significant net losses and we have funded our operations primarily through the issuance of equity securities, payments from corporate collaborators and strategic partners and research grants. Our most significant use of capital pertains to funding our preclinical and clinical research and development programs, as well as salaries and benefits for employees.

As of December 31, 2017, we had cash, cash equivalents, marketable securities and interest receivable totaling $244.6 million compared to $142.8 million as of December 31, 2016, with the increase primarily attributable to our completion of an underwritten public offering of our common stock in June 2017, in which 11.5 million shares of our common stock were sold at a public offering price of $7.25 per share. Net proceeds after deducting underwriting discounts and commissions and other estimated offering expenses, were appropriately $78.1 million. Cash, cash equivalents, and marketable security further increased attributable to $70.0 million for the upfront license and service fee received from Pfizer pursuant to the hemophilia A Pfizer agreement. Our cash and investment balances are held in a variety of interest bearing instruments, including obligations of U.S. government agencies, U.S. Treasury debt securities, corporate debt securities and money market funds. Cash in excess of immediate requirements is invested in accordance with our investment policy with a view toward capital preservation and liquidity.

On May 26, 2017, we entered into an Amended and Restated At-the-Market Offering Program Sales Agreement with an investment bank pursuant to which we may issue and sell from time to time shares of our common stock having an aggregate offering price of up to $75.0 million through the investment bank acting as our sales agent, or the 2017 ATM Agreement. Under the 2017 ATM Agreement, if we decide to sell shares, we will notify the sales agent, and the sales agent will use its commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold. Sales of our common stock, if any, will be made at market prices by any method that is deemed to be an “at the market offering” as defined in Rule 415 under the Securities Act, as amended, including sales made directly on The Nasdaq Global Select Market and sales to or through a market maker other than on an exchange. In addition, with our prior written consent, the sales agent may also sell shares of our common stock in negotiated transactions under the 2017 ATM Agreement. During the three months ended March 31, 2017, we issued a total of 871,149 shares of its common stock under the original At-the-Market Offering Program Sales Agreement entered into during December 2016, and received net proceeds of $3.4 million, after deducting offering expenses, including $0.1 million of commission paid to the sales agent. These shares were inadvertently sold under a registration statement filed with the SEC that had in fact expired prior to the time the shares were sold and accordingly, these shares are subject to potential rescission rights, as described in more detail under “Risk Factors”. In addition, if it were determined that we sold unregistered securities, we could be subject to enforcement actions or

penalties and fines by regulatory authorities. We have not sold any common stock under the 2017 ATM Agreement and the full $75.0 million provided for under the 2017 ATM Agreement remained available for sale thereunder at December 31, 2017.

Since the beginning of 2017, we have received significant amounts of capital as upfront payments under the following collaboration arrangements: $70.0 million received in May 2017 from Pfizer under our hemophilia A agreement; and $12.0 million received in January 2018 under our ALS/FTLD agreement. In addition, in February 2018, we entered into the Kite collaboration agreement pursuant to which upon its effectiveness we will be entitled to receive $150.0 million from Kite. The effectiveness of the Kite agreement is subject to the expiration or termination of all applicable waiting periods under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended and other customary closing conditions. We anticipate the effectiveness of the Kite agreement to occur in the first half of 2018. Our collaboration agreements provide for the payment of development, regulatory, and commercial milestones. For more information see “Business – Collaborations.”

*Cash Flow*

***Operating activities.*** Net cash provided by (used in) operating activities primarily reflects our net operating losses adjusted for non-cash items including stock-based compensation expense. Net cash provided by operating activities was $11.2 million in 2017 compared to net cash used in operating activities of $65.9 million in 2016. The increase in net cash provided by operating activities in 2017 was primarily due to the increase in deferred revenues related to the $70.0 million upfront payment from the hemophilia A agreement with Pfizer.

Net cash used in operating activities was $65.9 million in 2016 compared to $33.7 million in 2015. The increase in net cash used in operating activities in 2016 was primarily due to an increase operating expenses and a decrease in deferred revenues related to the recognition of the $20.0 million upfront payment from Bioverativ pursuant to the collaboration and license agreement.

***Investing activities.*** Net cash used in investing activities was $80.9 million in 2017. Net cash provided by investing activities was $18.1 million in 2016 and $77.5 million in 2015. Cash flows from investing activities for all periods was primarily related to purchases, sales and maturities of marketable securities and also includes deposits on cash related to lease commitments.

***Financing activities.*** Net cash provided by financing activities was $97.5 million in 2017, $0.3 million in 2016, and $19.7 million in 2015. Net cash provided by financing activities in 2017 was primarily attributable to the completion of an underwritten public offering of our common stock of $78.1 million, net of issuance costs, and $16.6 million in proceeds from the exercise of stock options. Net cash provided by financing activities in 2016 was primarily attributable to $1.1 million proceeds from the exercise of stock options, primarily offset by $0.8 million in taxes paid related to net share settlement of equity awards. Net cash provided by financing activities in 2015 was primarily attributable to a $14.5 million claim settlement with certain institutional investors that were beneficial owners of our common stock related to the disgorgement of short-swing profits pursuant to Section 16 of the Securities Exchange Act of 1934, as amended, as well as proceeds from the exercise of stock options.

*Operating Capital and Capital Expenditure Requirements*

We anticipate continuing to incur operating losses for at least the next several years. While we expect our rate of cash usage to increase in the future, in particular to support our product development endeavors, we believe that the available cash resources as well as funds received from corporate collaborators, strategic partners and research grants will enable us to maintain our currently planned operations through at least the next twelve months from the date the financial statements are issued. Future capital requirements will be substantial and if our capital resources are insufficient to meet future capital requirements, we will need to raise additional capital to fund our operations through equity or debt financing. We regularly consider fund raising opportunities and may decide, from time to time, to raise capital based on various factors, including market conditions and our plans of operation. Additional capital may not be available on terms acceptable to us, or at all. If adequate funds are not available, or if the terms of potential funding sources are unfavorable, our business and our ability to advance our product candidate pipeline would be harmed. Furthermore, any sales of additional equity securities, including any sales under our ATM Agreement, may result in dilution to our stockholders, and any debt financing may include covenants that restrict our business.

Our future capital requirements will depend on many forward looking factors, including the following:

- the initiation, progress, timing and completion of clinical trials for our product candidates and potential product candidates;
- the outcome, timing and cost of regulatory approvals;
- the success of our collaboration agreements;
- delays that may be caused by changing regulatory requirements;

- the number of product candidates that we pursue;
- the costs involved in filing and prosecuting patent applications and enforcing and defending patent claims;
- the timing and terms of future in-licensing and out-licensing transactions;
- the cost and timing of establishing sales, marketing, manufacturing and distribution capabilities;
- the cost of procuring clinical and commercial supplies of our product candidates;
- the extent to which we acquire or invest in businesses, products or technologies; and
- the possible costs of litigation.

**Off Balance Sheet Arrangements**

We do not have any off balance sheet arrangements as defined in Item 303(a)(4)(ii) of Regulation S-K.

**Contractual Obligations and Commercial Commitments**

As of December 31, 2017, we had contractual obligations and commercial commitments as follows (in thousands):

| | Payments Due by Period | | | | |
|---|---|---|---|---|---|
| **Contractual Obligations** | **Total** | **Less Than 1 Year** | **1-3 Years** | **4-5 Years** | **More Than 5 Years** |
| Operating leases | $ 39,434 | $ 1,685 | $ 10,518 | $ 3,335 | $ 23,896 |
| License obligations | 5,216 | 498 | 1,258 | 390 | 3,070 |
| Total contractual obligations | $ 44,650 | $ 2,183 | $ 11,776 | $ 3,725 | $ 26,966 |

Operating leases consist of base rents for facilities we occupy in Richmond, California and future location in Brisbane, California. The amounts in the table above do not include estimated costs for leasehold improvements. License obligations consist of ongoing license maintenance fees associated with cancelable in-licensed patent agreements.

In 2018 other commitments include $8.8 million for tenant improvements related to the Brisbane build-to-suit lease and $8.7 million as part of our services agreement with Brammer Bio MA, LLC, or Brammer, to provide dedicated capacity to supply our preclinical and clinical programs.

**ITEM 7A – QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

Our exposure to market risk relates to our cash, cash equivalents and investments. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and capturing a market rate of return based on our investment policy parameters and market conditions. We select investments that maximize interest income to the extent possible within these guidelines. To achieve our goals, we maintain a portfolio of cash equivalents and investments in securities of high credit quality and with varying maturities to match projected cash needs.

The securities in our investment portfolio are not leveraged, are classified as available-for-sale and are, due to their short-term nature, subject to minimal interest rate risk. Our investments currently consist of U.S. Treasury securities, U.S. government-sponsored enterprise securities and corporate notes. Our investment policy, approved by our Board of Directors, limits the amount we may invest in any one type of investment issuer, thereby reducing credit risk concentrations. All investments have a fixed interest rate and are carried at market value, which approximates cost. We do not use derivative financial instruments in our investment portfolio. We do not believe that a change in interest rates would have a material negative impact on the value of our investment portfolio.

**ITEM 8 – FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

**SANGAMO THERAPEUTICS, INC.**

**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of Sangamo Therapeutics, Inc.

**Opinion on the Financial Statements**
We have audited the accompanying consolidated balance sheets of Sangamo Therapeutics, Inc. (the Company) as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2017, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated March 1, 2018 expressed an unqualified opinion thereon.

**Basis for Opinion**
These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ ERNST & YOUNG LLP

We have served as the Company's auditor since 1997.
Redwood City, California
March 1, 2018

**SANGAMO THERAPEUTICS, INC.**

**CONSOLIDATED BALANCE SHEETS**

**(in thousands, except per share amounts)**

| | December 31, 2017 | December 31, 2016 |
|---|---|---|
| **ASSETS** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 49,826 | $ 22,061 |
| Marketable securities | 193,482 | 120,474 |
| Interest receivable | 240 | 224 |
| Accounts receivable | 3,343 | 4,972 |
| Prepaid expenses and other current assets | 1,506 | 1,849 |
| Total current assets | 248,397 | 149,580 |
| | | |
| Marketable securities, non-current | 1,012 | — |
| Property and equipment, net | 31,066 | 6,557 |
| Goodwill | 1,585 | 1,585 |
| Other assets | 4,681 | 169 |
| Total assets | $ 286,741 | $ 157,891 |
| **LIABILITIES AND STOCKHOLDERS' EQUITY** | | |
| Current liabilities: | | |
| Accounts payable and accrued liabilities | $ 11,035 | $ 6,261 |
| Accrued compensation and employee benefits | 5,479 | 2,885 |
| Deferred revenues | 28,345 | 4,145 |
| Total current liabilities | 44,859 | 13,291 |
| Deferred revenues, non-current | 29,244 | 4,460 |
| Build-to-suit lease obligation | 24,738 | 3,945 |
| Total liabilities | 98,841 | 21,696 |
| Commitments and contingencies | | |
| Stockholders' equity: | | |
| Common stock, $0.01 par value; 160,000,000 shares authorized, 85,598,534 and 70,871,902 shares issued and outstanding at December 31, 2017 and December 31, 2016, respectively | 856 | 709 |
| Additional paid-in capital | 682,809 | 576,377 |
| Accumulated deficit | (495,479) | (440,911) |
| Accumulated other comprehensive income (loss) | (286) | 20 |
| Total stockholders' equity | 187,900 | 136,195 |
| Total liabilities and stockholders' equity | $ 286,741 | $ 157,891 |

See accompanying Notes to Consolidated Financial Statements.

**SANGAMO THERAPEUTICS, INC.**

**CONSOLIDATED STATEMENTS OF OPERATIONS**

**(in thousands, except per share amounts)**

| | Year Ended December 31, | | |
|---|---|---|---|
| | **2017** | **2016** | **2015** |
| **Revenues:** | | | |
| Collaboration agreements | $ 35,960 | $ 18,881 | $ 37,844 |
| Research grants | 607 | 508 | 1,695 |
| Total revenues | 36,567 | 19,389 | 39,539 |
| **Operating expenses:** | | | |
| Research and development | 65,728 | 65,618 | 67,198 |
| General and administrative | 27,200 | 26,330 | 19,197 |
| Total operating expenses | 92,928 | 91,948 | 86,395 |
| Loss from operations | (56,361) | (72,559) | (46,856) |
| Interest and other income, net | 1,793 | 887 | 431 |
| Loss before income taxes | (54,568) | (71,672) | (46,425) |
| Benefit from income taxes | — | 14 | 5,722 |
| Net loss | $ (54,568) | $ (71,658) | $ (40,703) |
| Basic and diluted net loss per share | $ (0.70) | $ (1.02) | $ (0.58) |
| Shares used in computing basic and diluted net loss per share | 78,084 | 70,553 | 69,757 |

See accompanying Notes to Consolidated Financial Statements.

**SANGAMO THERAPEUTICS, INC.**

**CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS**

**(in thousands)**

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Net loss | $ (54,568) | $ (71,658) | $ (40,703) |
| Change in unrealized gain (loss) on available-for-sale securities, net of tax | (306) | 20 | 25 |
| Comprehensive loss | $ (54,874) | $ (71,638) | $ (40,678) |

See accompanying Notes to Consolidated Financial Statements.

**SANGAMO THERAPEUTICS, INC.**

**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**

**(in thousands, except share amounts)**

| | Common Stock | | Additional Paid-in Capital | Accumulated Deficit | Accumulated Other Comprehensive Income/ (Loss) | Total Stockholders' Equity |
|---|---|---|---|---|---|---|
| | Shares | Amount | | | | |
| Balances at December 31, 2014 | 69,062,394 | 690 | 534,518 | (328,550) | (25) | 206,633 |
| Issuance of common stock upon exercise of stock options and in connection with restricted stock units, net of tax | 1,164,033 | 12 | 4,336 | — | — | 4,348 |
| Issuance of common stock under employee stock purchase plan | 128,181 | 1 | 910 | — | — | 911 |
| Stock-based compensation | — | — | 11,730 | — | — | 11,730 |
| Claims settlement under Section 16(b), net of tax benefit | — | — | 9,495 | — | — | 9,495 |
| Comprehensive loss: | | | | | | |
| Net unrealized loss on marketable securities | — | — | — | — | 25 | 25 |
| Net loss | — | — | — | (40,703) | — | (40,703) |
| Comprehensive loss | — | — | — | — | — | (40,678) |
| Balances at December 31, 2015 | 70,354,608 | 703 | 560,989 | (369,253) | — | 192,439 |
| Issuance of common stock upon exercise of stock options and in connection with restricted stock units, net of tax | 314,583 | 3 | (484) | — | — | (481) |
| Issuance of common stock under employee stock purchase plan | 202,711 | 3 | 815 | — | — | 818 |
| Stock-based compensation | — | — | 15,057 | — | — | 15,057 |
| Comprehensive loss: | | | | | | |
| Net unrealized gain on marketable securities, net of tax | — | — | — | — | 20 | 20 |
| Net loss | — | — | — | (71,658) | — | (71,658) |
| Comprehensive loss | — | — | — | — | — | (71,638) |
| Balances at December 31, 2016 | 70,871,902 | 709 | 576,377 | (440,911) | 20 | 136,195 |
| Issuance of common stock upon exercise of stock options and in connection with restricted stock units, net of tax | 2,101,489 | 21 | 15,078 | — | — | 15,099 |
| Issuance of common stock under employee stock purchase plan | 253,994 | 2 | 816 | — | — | 818 |
| Issuance of common stock under public offering, net of issuance costs | 12,371,149 | 124 | 81,449 | | | 81,573 |
| Stock-based compensation | — | — | 9,089 | — | — | 9,089 |
| Comprehensive loss: | | | | | | |
| Net unrealized loss on marketable securities, net of tax | — | — | — | — | (306) | (306) |
| Net loss | — | — | — | (54,568) | — | (54,568) |
| Comprehensive loss | — | — | — | — | — | (54,874) |
| Balances at December 31, 2017 | 85,598,534 | $ 856 | $ 682,809 | $ (495,479) | $ (286) | $ 187,900 |

See accompanying Notes to Consolidated Financial Statements.

**SANGAMO THERAPEUTICS, INC.**

**CONSOLIDATED STATEMENTS OF CASH FLOWS**

**(in thousands)**

| | Year Ended December 31, | | |
|---|---|---|---|
| | **2017** | **2016** | **2015** |
| **Operating Activities:** | | | |
| Net loss | $ (54,568) | $ (71,658) | $ (40,703) |
| Adjustments to reconcile net loss to net cash provided by (used in) operating activities: | | | |
| Depreciation and amortization | 1,498 | 997 | 988 |
| Amortization of premium (discount) on marketable securities | (673) | 221 | 827 |
| Net loss on disposal of property and equipment | 12 | — | — |
| Stock-based compensation | 9,089 | 15,057 | 11,730 |
| Change in fair value of contingent consideration liability | — | — | (1,800) |
| Intangible impairment | — | — | 1,870 |
| Benefit from income taxes | — | (14) | (5,722) |
| Other | 80 | 99 | — |
| Net changes in operating assets and liabilities: | | | |
| Interest receivable | (16) | 83 | 116 |
| Accounts receivable | 1,629 | (2,144) | 7,847 |
| Prepaid expenses and other assets | (669) | (1,112) | 376 |
| Accounts payable and accrued liabilities | 3,219 | (2,335) | (764) |
| Accrued compensation and employee benefits | 2,594 | 137 | (105) |
| Deferred revenues | 48,984 | (5,214) | (8,380) |
| Net cash provided by (used in) operating activities | 11,179 | (65,883) | (33,720) |
| **Investing Activities:** | | | |
| Purchases of marketable securities | (252,328) | (218,640) | (257,988) |
| Maturities of marketable securities | 178,675 | 237,497 | 337,861 |
| Purchases of property and equipment | (3,751) | (732) | — |
| Lease commitments | (3,500) | — | — |
| Acquisition of Ceregene, Inc. net of cash received | — | — | (2,411) |
| Net cash (used in) provided by investing activities | (80,904) | 18,125 | 77,462 |
| **Financing Activities:** | | | |
| Proceeds from public offering of common stock, net of issuance costs | 81,573 | — | — |
| Taxes paid related to net share settlement of equity awards | (654) | (776) | (1,546) |
| Proceeds from issuance of common stock | 16,571 | 1,113 | 6,804 |
| Claims settlement under Section 16(b) | — | — | 14,452 |
| Net cash provided by financing activities | 97,490 | 337 | 19,710 |
| Net increase (decrease) in cash and cash equivalents | 27,765 | (47,421) | 63,452 |
| Cash and cash equivalents, beginning of period | 22,061 | 69,482 | 6,030 |
| Cash and cash equivalents, end of period | $ 49,826 | $ 22,061 | $ 69,482 |
| **Supplemental disclosure of noncash investing activities:** | | | |
| Property and equipment included in accrued liabilities | $ 1,214 | — | — |
| Build-to-suit leases included in build-to-suit obligation | $ 20,793 | $ 3,876 | — |

See accompanying Notes to Consolidated Financial Statements.

## NOTE 1 – ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

***Overview***

Sangamo Therapeutics, Inc. was incorporated in the State of Delaware on June 22, 1995 and changed its name from Sangamo Biosciences, Inc. in January 2017 (the Company or Sangamo). Sangamo is focused on the research, development and commercialization of novel therapeutic strategies for unmet medical needs. Sangamo's genome editing and gene regulation technology platform is enabled by the engineering of a class of transcription factors known as zinc finger DNA-binding proteins (ZFPs). Potential applications of Sangamo's technology include development of human therapeutics, plant agriculture and enhancement of pharmaceutical protein production. Sangamo will require additional financial resources to complete the development and commercialization of its products including ZFP Therapeutics.

Sangamo is currently working on a number of long-term development projects that will involve experimental technology. The projects may require several years and substantial expenditures to complete and ultimately may be unsuccessful. The Company plans to finance operations with available cash resources, collaborations and strategic partnerships funds, research grants and from the issuance of equity or debt securities. Sangamo believes that its available cash, cash equivalents and investments as of December 31, 2017, along with expected revenues from collaborations, strategic partnerships and research grants, will be adequate to fund its operations at least through the next twelve months from the date the financial statements are issued. Sangamo will need to raise substantial additional capital to fund subsequent operations and complete the development and commercialization of its products. Additional capital may not be available on terms acceptable to the Company, or at all. If adequate funds are not available, or if the terms of potential funding sources are unfavorable, the Company's business and ability to develop its technology and ZFP Therapeutic products would be harmed. Furthermore, any sales of additional equity securities may result in dilution to the Company's stockholders, and any debt financing may include covenants that restrict the Company's business.

***Basis of Presentation***

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from those estimates. The consolidated financial statements include the accounts of Sangamo and its wholly-owned subsidiaries, Ceregene and Gendaq Limited, after elimination of all intercompany balances and transactions.

***Business Combinations***

The Company accounts for acquisitions in accordance with Accounting Standards Codification (ASC) Topic 805, *Business Combinations* (ASC Topic 805). ASC Topic 805 establishes principles and requirements for recognizing and measuring the total consideration transferred to and the assets acquired, liabilities assumed and any non-controlling interests in the acquired target in a business combination. ASC Topic 805 also provides guidance for recognizing and measuring goodwill acquired in a business combination; requires purchased in-process research and development to be capitalized at fair value as an intangible asset at the time of acquisition; requires acquisition-related expenses and restructuring costs to be recognized separately from the business combination; expands the definition of what constitutes a business; and requires the acquirer to disclose information that users may need to evaluate and understand the financial effect of the business combination.

***Cash and Cash Equivalents***

Sangamo considers all highly-liquid investments purchased with original maturities of three months or less at the purchase date to be cash equivalents. Cash and cash equivalents consist of deposits in money market investment accounts.

***Marketable Securities***

Sangamo classifies its marketable securities as available-for-sale and records its investments at estimated fair value based on quoted market prices or observable market inputs of almost identical assets, with the unrealized holding gains and losses included in accumulated other comprehensive income.

The Company's investments are subject to a periodic impairment review. The Company recognizes an impairment charge when a decline in the fair value of its investments below the cost basis is judged to be other-than-temporary. The Company considers various factors in determining whether to recognize an impairment charge, including the length of time and extent to which the fair

value has been less than the Company's cost basis, the financial condition and near-term prospects of the investee, and the Company's intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in the market value. Realized gains and losses on available-for-sale securities are included in other income, which is determined using the specific identification method.

***Fair Value Measurements***

The carrying amounts for financial instruments consisting of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate fair value due to their short maturities. Marketable securities and contingent consideration liabilities are stated at their estimated fair values. The counterparties to the agreements relating to the Company's investment securities consist of the US Treasury, governmental agencies, various major corporations and financial institutions with high credit standing.

***Property and Equipment***

Property and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation is calculated using the straight-line method based on the estimated useful lives of the related assets (generally three to five years). For leasehold improvements, amortization is calculated using the straight-line method based on the shorter of the useful life or the lease term. The Company reviews its property and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable.

***Use of Estimates***

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and the accompanying notes. On an ongoing basis, management evaluates its estimates, including critical accounting policies or estimates related to revenue recognition, clinical trial accruals, and stock-based compensation. Estimates are based on historical experience and on various other market specific and other relevant assumptions that the Company believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from those estimates. During the fourth quarter of 2016, we revised our estimated performance period under the Bioverativ license agreement from June 2019 to June 2020, which also extended the recognition period of the related up-front payment we received upon entering this agreement (See Note 5). This change decreased revenues by $4.3 million and increased net loss and net loss per share by $0.06 for the year ended December 31, 2016.

***Revenue Recognition***

Revenues from research activities made under strategic partnering agreements and collaborations are recognized as the services are provided when there is persuasive evidence that an arrangement exists, delivery has occurred, the price is fixed or determinable, and collectability is reasonably assured. Revenue generated from research and licensing agreements typically includes upfront signing or license fees, cost reimbursements, research services, minimum sublicense fees, milestone payments and royalties on future licensee's product sales.

*Multiple Element Arrangements prior to the adoption of ASU No. 2009-13, Revenue Recognition—Multiple Deliverable Revenue Arrangements (ASU 2009-13).* For revenue arrangements entered into before January 1, 2011, that include multiple deliverables, the elements of such agreement were divided into separate units of accounting if the deliverables met certain criteria, including whether the fair value of the delivered items could be determined and whether there was evidence of fair value of the undelivered items. In addition, the consideration was allocated among the separate units of accounting based on their fair values, and the applicable revenue recognition criteria are considered separately for each of the separate units of accounting. Prior to the adoption of ASU 2009-13, the Company recognized nonrefundable signing, license or non-exclusive option fees as revenue when rights to use the intellectual property related to the license were delivered and over the period of performance obligations if the Company had continuing performance obligations. The Company estimated the performance period at the inception of the arrangement and reevaluated it each reporting period. Changes to these estimates were recorded on a prospective basis.

*Multiple Element Arrangements after the adoption of ASU 2009-13.* ASU 2009-13 amended the accounting standards for certain multiple element revenue arrangements to:

- provide updated guidance on whether multiple elements exist, how the elements in an arrangement should be separated, and how the arrangement consideration should be allocated to the separate elements;
- require an entity to allocate arrangement consideration to each element based on a selling price hierarchy where the selling price for an element is based on vendor-specific objective evidence, or VSOE, if available; third-party evidence,

or TPE, if available and VSOE is not available; or the best estimate of selling price, or ESP, if neither VSOE nor TPE is available; and

- eliminate the use of the residual method and require an entity to allocate arrangement consideration using the relative selling price method.

For revenue agreements with multiple element arrangements, such as license and development agreements, entered into on or after January 1, 2011, the Company allocates revenue to each non-contingent element based on the relative selling price of each element. When applying the relative selling price method, the Company determines the selling price for each deliverable using VSOE of selling price or TPE of selling price. If neither exists the Company uses ESP for that deliverable. Revenue allocated is then recognized when the basic four revenue recognition criteria are met for each element. The collaboration and license agreements entered into with Shire International GmbH, formerly Shire AG, or Shire, in January 2012, Biogen MA Inc., or Biogen, in January 2014, and Pfizer Inc., or Pfizer, in May and December of 2017, were evaluated under these amended accounting standards.

Additionally, the Company may be entitled to receive certain milestone payments which are contingent upon reaching specified objectives. These milestone payments are recognized as revenue in full upon achievement of the milestone if there is substantive uncertainty at the date the arrangement is entered into that objectives will be achieved and if the achievement is based on the Company's performance.

Minimum annual sublicense fees are also recognized as revenue in the period in which such fees are due. Royalty revenues are generally recognized when earned and collectability of the related royalty payment is reasonably assured. The Company recognizes cost reimbursement revenue under collaborative agreements as the related research and development costs for services are rendered. Deferred revenue represents the portion of research or license payments received but not earned.

Sangamo's research grants are typically multi-year agreements and provide for the reimbursement of qualified expenses for research and development as defined under the terms of the grant agreement. Revenue under grant agreements is recognized when the related qualified research expenses are incurred.

During 2017, revenues related to Pfizer and Bioverativ represented 47% and 34%, respectively, of the Company's total revenue. During 2016 revenue related to Bioverativ, DAS and Shire represented 46%, 26%, and 17%, respectively, of total revenue. During 2015 revenue related to Shire and Biogen represented 40% and 35%, respectively, of total revenues. Receivables from collaborations are typically unsecured and are concentrated in the biopharmaceutical industry. Accordingly, we may be exposed to credit risk generally associated with biopharmaceutical companies or specific to our collaboration agreements. To date, we have not experienced any losses related to these receivables.

***Research and Development Expenses***

Research and development costs are expensed as incurred. Research and development expenses consist of direct and research-related allocated overhead costs such as facilities costs, salaries and related personnel costs, and material and supply costs. In addition, research and development expenses include costs related to clinical trials, validation of the Company's testing processes and procedures as well as related overhead expenses. Research and development costs incurred in connection with collaborator-funded activities are expensed as incurred. Costs to acquire technologies that are utilized in research and development that have no alternative future use are expensed as incurred.

***Stock-Based Compensation***

The Company measures and recognizes compensation expense for all stock-based payment awards made to Sangamo employees and directors, including employee share options, restricted stock units (RSUs) and employee stock purchases related to the Employee Stock Purchase Plan (ESPP), based on estimated fair values at the award grant date. The fair value of stock-based awards is amortized over the vesting period of the award using a straight-line method.

To estimate the fair value of an award, the Company uses the Black-Scholes option pricing model. This model requires inputs such as expected life, expected volatility and risk-free interest rate. These inputs are subjective and generally require significant analysis and judgment to develop. While estimates of expected life and volatility are derived primarily from the Company's historical data, the risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant commensurate with the expected life assumption. Further, the Company adopted Accounting Standards Update (ASU) 2016-09 and accounts for forfeitures in the period they occur.

***Indefinite-Lived Intangible Assets***

As part of the Ceregene acquisition the Company recognized indefinite-lived intangible assets for in-process research and development and goodwill as further discussed below. ASC 350 and related updates require companies to test indefinite-lived intangible assets for impairment annually, and more frequently if indicators of impairment exist. ASC 350 includes an optional qualitative assessment for testing indefinite-lived intangible assets for impairment that permits companies to assess whether it is more likely than not (i.e., a likelihood of greater than 50%) that an indefinite-lived intangible asset is impaired. If a company concludes based on the qualitative assessment that it is not more likely than not that the fair value of an indefinite-lived intangible asset or, in the case of goodwill, that the fair value of the related reporting unit, is less than carrying value, it would not have to determine the asset's or reporting unit's fair value, as applicable.

***In-Process Research and Development***

Intangible assets related to in-process research and development costs, or IPR&D, are considered to be indefinite-lived until the completion or abandonment of the associated research and development efforts. If and when development is complete, which generally occurs if and when regulatory approval to market a product is obtained, the associated assets would be deemed finite-lived and would then be amortized based on their respective estimated useful lives at that point in time. Prior to completion of the research and development efforts, the assets are considered indefinite-lived. During this period, the assets will not be amortized but will be tested for impairment on an annual basis and between annual tests if the Company becomes aware of any events occurring or changes in circumstances that would indicate a reduction in the fair value of the IPR&D projects below their respective carrying amounts. In the first quarter of 2015, the Company decided to discontinue the CERE-110 and CERE-120 clinical trial programs. As such, the probability of achieving projected revenues and cash flows associated with these programs were adversely affected. The Company did not believe the programs have an alternative future use for itself or other market participants. Accordingly, the Company recognized a $1.9 million impairment charge related to these assets during the year ended December 31, 2015, which was recognized as research and development (R&D) in the accompanying consolidated statements of operations.

***Goodwill***

Goodwill represents the excess of the consideration transferred over the estimated fair values of assets acquired and liabilities assumed in a business combination and is considered to be indefinite-lived. Goodwill is not amortized but is tested for impairment on an annual basis and between annual tests if the Company becomes aware of any events occurring or changes in circumstances that would indicate an impairment of goodwill has occurred. During the fourth quarter of 2017, the Company performed an assessment of the qualitative factors affecting the fair value of its reporting unit and concluded that it was not more likely than not that the fair value of its reporting unit was less than carrying value and that, as a result, it is not more likely than not that goodwill is impaired.

***Contingent Consideration Liability***

Under the merger agreement with Ceregene, the Company is required to make contingent earn-out payments if the Company grants a third-party license to develop and commercialize certain product candidates acquired from Ceregene, or if the Company commercializes any of such product candidates itself. These earn-out payments will become payable in the period they are earned. In accordance with ASC Topic 805, the Company determined the fair value of this liability for contingent consideration on the acquisition date using a probability-weighted discounted cash flow analysis. During the year ended December 31, 2015, the recognized amount of the liability for contingent consideration decreased by $1.8 million due to the decrease in the probability of incurring potential future royalty payments associated with the impairment of IPR&D assets acquired from Ceregene.

***Income Taxes***

Income tax expense has been provided using the liability method. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities as measured by the enacted tax rates that will be in effect when these differences reverse. The Company provides a valuation allowance against net deferred tax assets if, based upon the available evidence, it is not more likely than not that the deferred tax assets will be realized.

***Net Loss Per Share***

Basic net loss per share has been computed by dividing net loss by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share is calculated by dividing net loss by the weighted average number of shares of common stock and potential dilutive securities outstanding during the period.

Because Sangamo is in a net loss position, diluted net loss per share excludes the effects of common stock equivalents consisting of options and restricted stock units, which are all anti-dilutive. All stock options and restricted stock units outstanding

were excluded from the calculation of diluted net loss per share for all periods presented. Stock options and restricted stock units outstanding at the end of 2017, 2016 and 2015 were 8,367,628, 9,578,322, and 9,008,185, respectively.

***Segments***

The Company operates in one segment. Management uses one measure of profitability and does not segregate its business for internal reporting. As of December 31, 2017 and 2016, all of the Company's assets were maintained in the U.S. For the years ended December 31, 2017, 2016 and 2015, substantially all the Company's revenues and operating expenses were generated and incurred in the U.S.

***Recent Accounting Pronouncements***

In March 2016 the Financial Accounting Standards Board (FASB) issued ASU 2016-09, Improvements to Employee Share-Based Payment Accounting (Topic 718). The amendments in ASU 2016-09 affect all entities that issue share-based payment awards to their employees and involve multiple aspects of the accounting for share-based payment transactions, including income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The ASU is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. Early adoption is permitted for any entity in any interim or annual period. If an entity early adopts the amendments in an interim period, any adjustments should be reflected as of the beginning of the fiscal year that includes that interim period. An entity that elects early adoption must adopt all of the amendments in the same period. The Company adopted the ASU in the first quarter of 2017 and it did not have a material impact on the Company's consolidated financial statements. The impact of ASU 2016-09 as it relates to stock-based compensation for deferred tax assets and liabilities balances were not material to the Company's consolidated financial statements.

In February 2016 the FASB issued ASU No. 2016-02 (ASU 2016-02) "*Leases*." ASU 2016-02 amends a number of aspects of lease accounting, including requiring lessees to recognize almost all leases with a term greater than one year as a right-of-use asset and corresponding liability, measured at the present value of the lease payments. The guidance will become effective for the Company beginning in the first quarter of 2019 with early adoption permitted and will be adopted using a modified retrospective approach. We are evaluating the impact of the adoption of this standard on our consolidated financial statements, and expect our operating lease commitments will be subject to the new standard and recognized as a right-of-use assets and operating lease liabilities upon adoption which will increase our total assets and total liabilities as compared to amounts prior to adoption.

In May 2014 the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)*, or ASC 606. This standard outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The main principle of ASU 2014-09 is to recognize revenues when promised goods or services are transferred to customers in an amount that reflects the consideration that is expected to be received for those goods or services. ASU 2014-09 provides companies with two implementation methods: (i) apply the standard retrospectively to each prior reporting period presented (full retrospective application); or (ii) apply the standard retrospectively with the cumulative effect of initially applying the standard as an adjustment to the opening balance of retained earnings of the annual reporting period that includes the date of initial application (modified retrospective application). This guidance is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. Under Topic 606, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. Topic 606 also impacts certain other areas, such as the accounting for costs to obtain or fulfill a contract.

The Company will adopt ASC 606 during the first quarter of 2018 and using the modified retrospective method. The Company has substantially completed its evaluation of the impact of adopting ASC 606 on its contracts with Bioverativ, Shire, DAS, and Sigma (as defined below). The Company's performance obligations with respect to Shire, DAS and Sigma were substantially complete at December 31, 2017 and any future receipts are contingent upon these counterparties achieving specified development, commercial, and/or sales targets and would be in the form of milestones or royalties, all of which management concluded are constrained at December 31, 2017 as defined under ASC 606. The Company has also performed an assessment of the impact of adopting ASC 606 on its Bioverativ collaboration arrangement and has preliminarily concluded that the timing of the recognition of up-front payments and research and development reimbursements will be decelerated under the new guidance while development and commercialization milestones are constrained at December 31, 2017, as defined under ASC 606. Based on this assessment, management has preliminarily concluded that the transition adjustment to be recognized on January 1, 2018 will be less than $5.0 million and will result in a decrease

to accumulated deficit and an increase to deferred revenue at that date as a result of decelerating the recognition of amounts related to research and development reimbursements and up-front payments under ASC 606.

The Company has not completed its assessment of the effect that the adoption of ASC 606 will have on its agreements with Pfizer that were entered into during 2017. The Company has preliminarily concluded that any potential milestone and royalty payments payable under these agreements are constrained at December 31, 2017, as defined under ASC 606, and thus will not result in a change upon adoption of ASC 606 from the accounting for such payments under ASC 605. No revenue or other amounts were recognized in 2017 related to the agreement that was entered into with Pfizer in late December 2017 and, accordingly, management does not expect any amounts to be recognized as part of the January 2018 transition adjustment related to this agreement. During 2017, the Company recognized as revenue $17.0 million of the $70.0 million up-front payment received from agreement the Company entered into with Pfizer in May 2017, the amount and timing of which may change upon adoption of ASC 606.

The estimates of the expected effects of the Company's adoption of ASU 2014-09 represent management's best estimates of the effects of adopting ASU 2014-09 at the time of the preparation of this Annual Report on Form 10-K. The actual, final quantitative effects of the adoption of ASU 2014-09 are subject to change from these estimates and such change may be significant, pending the completion of the Company's assessment in the first quarter of 2018.

**NOTE 2 –FAIR VALUE MEASUREMENT**

The Company measures certain assets and liabilities at fair value on a recurring basis, including cash equivalents, available-for-sale securities and the contingent consideration liability. Fair value is determined based on a three-tier hierarchy under the authoritative guidance for fair value measurements and disclosures that prioritizes the inputs used in measuring fair value as follows:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;

Level 2: Quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability; and

Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

The fair value measurements of cash equivalents, available-for-sale securities and the contingent consideration liability are identified at the following levels within the fair value hierarchy (in thousands):

| | December 31, 2017 | | | |
|---|---|---|---|---|
| | Fair Value Measurements | | | |
| | Total | Level 1 | Level 2 | Level 3 |
| Assets: | | | | |
| Cash equivalents: | | | | |
| Money market funds | $ 24,290 | $ 24,290 | $ — | $ — |
| Commercial paper securities | 4,595 | — | 4,595 | — |
| Total | 28,885 | 24,290 | 4,595 | — |
| Marketable securities: | | | | |
| Commercial paper securities | 110,247 | — | 110,247 | — |
| Corporate debt securities | 75,755 | — | 75,755 | — |
| U.S. government-sponsored entity debt securities | 8,492 | — | 8,492 | — |
| Total | 194,494 | — | 194,494 | — |
| Total cash equivalents and marketable securities | $ 223,379 | $ 24,290 | $ 199,089 | — |

| | December 31, 2016 Fair Value Measurements | | | |
|---|---|---|---|---|
| | Total | Level 1 | Level 2 | Level 3 |
| Assets: | | | | |
| Cash equivalents: | | | | |
| Money market funds | $ 18,992 | $ 18,992 | $ — | $ — |
| Total | 18,992 | 18,992 | — | — |
| Marketable securities: | | | | |
| Commercial paper securities | 23,185 | — | 23,185 | — |
| Corporate debt securities | 10,004 | — | 10,004 | — |
| U.S. government-sponsored entity debt securities | 87,285 | — | 87,285 | — |
| Total | 120,474 | — | 120,474 | — |
| Total cash equivalents and marketable securities | $ 139,466 | $ 18,992 | $ 120,474 | $ — |

***Investments***

The Company generally classifies its marketable securities as Level 2. Instruments are classified as Level 2 when observable market prices for identical securities that are traded in less active markets are used. When observable market prices for identical securities are not available, such instruments are priced using benchmark curves, benchmarking of like securities, sector groupings, matrix pricing and valuation models. These valuation models are proprietary to the pricing providers or brokers and incorporate a number of inputs, including, listed in approximate order of priority: benchmark yields, reported trades, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers and reference data including market research publications. For certain security types, additional inputs may be used, or some of the standard inputs may not be applicable. Evaluators may prioritize inputs differently on any given day for any security based on market conditions, and not all inputs listed are available for use in the evaluation process for each security evaluation on any given day.

***Contingent Consideration Liability***

In August 2013 the Company acquired Ceregene and recorded a liability for the estimated fair value of contingent consideration payments to former Ceregene stockholders, as outlined under the terms of the merger agreement with Ceregene. These contingent payments are owed if the Company grants a third-party license to develop and commercialize certain product candidates acquired from Ceregene, or if the Company commercializes any of such product candidates itself. The fair value of this liability is estimated using a probability-weighted discounted cash flow analysis. Such valuations require significant estimates and assumptions including but not limited to: determining the timing and estimated costs to complete the in-process projects, projecting regulatory approvals, estimating future cash flows and developing appropriate discount rates. The Company has classified this liability as Level 3.

The subsequent changes in the fair value of the contingent consideration liability were recognized as a component of research and development expense line item in the accompanying consolidated statements of operations as operating expenses. During the year ended December 31, 2015, the recognized amount of the liability for contingent consideration decreased by the total fair value of the contingent consideration of $1.8 million due to the decrease in the probability of incurring potential future royalty payments associated with the impairment of IPR&D assets acquired from Ceregene (see Note 6).

**NOTE 3 – MARKETABLE SECURITIES**

The table below summarizes the Company's cash equivalents and available-for-sale securities (in thousands):

| | Amortized Cost | Gross Unrealized Gains | Gross Unrealized (Losses) | Estimated Fair Value |
|---|---|---|---|---|
| **December 31, 2017** | | | | |
| Cash equivalents: | | | | |
| Money market funds | $ 24,290 | $ — | $ — | $ 24,290 |
| Commercial paper securities | 4,595 | — | — | 4,595 |
| Total | 28,885 | — | — | 28,885 |
| Available-for-sale securities: | | | | |
| Commercial paper securities | 110,365 | — | (118) | 110,247 |
| Corporate debt securities | 75,886 | — | (131) | 75,755 |
| U.S. government-sponsored entity debt securities | 8,498 | — | (6) | 8,492 |
| Total | 194,749 | — | (255) | 194,494 |
| Total cash equivalents and available-for-sale securities | $ 223,634 | — | $ (255) | $ 223,379 |
| **December 31, 2016** | | | | |
| Cash equivalents: | | | | |
| Money market funds | $ 18,992 | $ — | $ — | $ 18,992 |
| Total | 18,992 | — | — | 18,992 |
| Available-for-sale securities: | | | | |
| Commercial paper securities | 23,112 | 73 | — | 23,185 |
| Corporate debt securities | 10,005 | — | (1) | 10,004 |
| U.S. government-sponsored entity debt securities | 87,307 | 3 | (25) | 87,285 |
| Total | 120,424 | 76 | (26) | 120,474 |
| Total cash equivalents and available-for-sale securities | $ 139,416 | $ 76 | $ (26) | $ 139,466 |

As of December 31, 2017, all of the Company's investments had maturity dates within two years as of the balance sheet date. The Company had no material realized losses from the sale of available-for-sale securities for the years ended December 31, 2017, 2016 or 2015. Sangamo has the intent and ability to hold its investments for a period of time sufficient to allow for any anticipated recovery in market value. No investments were other-than-temporarily impaired at either December 31, 2017 or 2016.

**NOTE 4 – STOCK-BASED COMPENSATION**

The following table shows total stock-based compensation expense recognized in the accompanying consolidated statements of operations (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Research and development | $ 5,031 | $ 6,463 | $ 6,444 |
| General and administrative | 4,058 | 8,594 | 5,286 |
| Total stock-based compensation expense | $ 9,089 | $ 15,057 | $ 11,730 |

As of December 31, 2017, total stock-based compensation expense related to unvested stock options to be recognized in future periods was $16.1 million, which is expected to be expensed over a weighted-average period of 2.79 years. As of December 31, 2017, total stock-based compensation expense related to unvested RSUs to be recognized in future periods was $0.7 million, which is expected to be expensed over a weighted-average period of 1.03 years. There was no capitalized stock-based employee compensation expense as of either December 31, 2017, 2016 or 2015 respectively.

**Valuation Assumptions**

Employee stock-based compensation expense was determined using the Black-Scholes option valuation model. Option valuation models require the input of subjective assumptions and these assumptions can vary over time.

The Company bases its determination of expected volatility through its assessment of the historical volatility of its common stock. The Company relied on its historical exercise and post-vested termination activity for estimating its expected term for use in determining the fair value of these options.

The weighted-average estimated fair value per share of options granted during 2017, 2016 and 2015 was $4.10, $3.14, and $5.72, respectively, based upon the assumptions used in the Black-Scholes valuation model. The assumptions used for estimating the fair value of the employee stock options are as follows:

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Risk-free interest rate | 1.81-2.28% | 1.13-1.61% | 1.46-1.58% |
| Expected life of option (in years) | 5.73-5.83 | 5.28-5.29 | 5.25-5.31 |
| Expected dividend yield of stock | 0% | 0% | 0% |
| Expected volatility | 0.71-0.72 | 0.68-0.70 | 0.66-0.67 |

Employees purchased approximately 253,994, 202,711 and 128,181 shares of common stock through the 2010 Employee Stock Purchase Plan at an average exercise price of $3.22, $4.04, and $7.10 per share during 2017, 2016 and 2015, respectively. The weighted-average estimated fair value of shares purchased under the Company's ESPP during 2017, 2016 and 2015 were $2.37, $2.27 and $4.42, respectively based upon the assumptions used in the Black-Scholes valuation model.

The weighted–average assumptions used for estimating the fair value of the ESPP purchase rights are as follows:

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Risk-free interest rate | 0.44-0.76% | 0.41-0.80% | 0.06-0.33% |
| Expected life of option (in years) | 0.5-2.0 | 0.5-2.0 | 0.5-2.0 |
| Expected dividend yield of stock | 0% | 0% | 0% |
| Expected volatility | 0.66-0.82 | 0.71-0.76 | 0.55-0.70 |

**NOTE 5 – MAJOR CUSTOMERS, PARTNERSHIPS AND STRATEGIC ALLIANCES**

**Collaboration Agreements**

***Collaboration and License Agreement with Pfizer Inc. in Human Therapeutics***

*SB-525 Global Collaboration and License Agreement*

On May 10, 2017, Sangamo entered into an exclusive, global Collaboration and License Agreement (the "with Pfizer pursuant to which Sangamo and Pfizer established a collaboration for the research, development and commercialization of SB-525, Sangamo's gene therapy product candidate for hemophilia A, and closely related products (the "hemophilia A Pfizer Agreement").

Under the hemophilia A Pfizer Agreement, Sangamo will be responsible for conducting the Phase 1/2 clinical trial and certain manufacturing activities for SB-525, while Pfizer will be responsible for subsequent worldwide development, manufacturing, marketing and commercialization of SB-525. Sangamo and Pfizer may also collaborate in the research and development of additional adeno-associated virus ("AAV")-based gene therapy products for hemophilia A.

Under the hemophilia A Pfizer Agreement, Sangamo received an upfront fee of $70.0 million from Pfizer. In addition, Sangamo is eligible to receive $208.5 million in payments upon the achievement of specified clinical development, intellectual property and regulatory milestones and $266.5 million in payments upon the achievement of specified first commercial sale milestones for SB-525 and potentially other products. The total amount of potential clinical development, intellectual property, regulatory, and first commercial sale milestone payments, assuming the achievement of all specified milestones in the hemophilia A Pfizer Agreement, is $475.0 million, which includes up to $300.0 million for SB-525 and up to $175.0 million for other products that may be developed under the hemophilia A Pfizer Agreement, subject to reduction on account of payments made under certain licenses for third party intellectual property. In addition, Pfizer has agreed to pay Sangamo royalties for each potential licensed product developed under the hemophilia A Pfizer Agreement that are an escalating tiered, double-digit percentage of the annual net sales of such product and are subject to reduction due to patent expiration, entry of biosimilar products to the market and payment made under certain licenses for third party intellectual property. To date, no milestone payments have been received and no products have been approved and therefore no royalty fees have been earned under the hemophilia A Pfizer Agreement. Sangamo in responsible for internal and external research costs as part of the upfront fee and has the ability to request additional reimbursement from Pfizer if certain conditions are met.

Subject to the terms of the hemophilia A Pfizer Agreement, Sangamo granted Pfizer an exclusive, worldwide, royalty-bearing license, with the right to grant sublicenses, to use certain technology controlled by Sangamo for the purpose of developing, manufacturing and commercializing SB-525 and related products. Under the hemophilia A Pfizer Agreement, Pfizer granted Sangamo a non-exclusive, worldwide, royalty free, fully paid license, with the right to grant sublicenses, to use certain manufacturing technology developed under the hemophilia A Pfizer Agreement and controlled by Pfizer to manufacture Sangamo's products that utilize the AAV delivery system. During a specified period, neither Sangamo nor Pfizer will be permitted to clinically develop or commercialize, outside of the collaboration, certain AAV-based gene therapy products for hemophilia A.

The Company has identified the deliverables within the hemophilia A Pfizer Agreement as a license to the technology and on-going services. The Company concluded that the license is not a separate unit of accounting as it does not have stand-alone value to Pfizer apart from the services to be performed by the Company pursuant to the hemophilia A Pfizer Agreement. As a result, the Company will recognize revenue from the upfront payment on a straight-line basis over a thirty-two month estimated time over which the Company will perform services under the hemophilia A Pfizer Agreement. The recognition period will be reviewed quarterly and adjusted, as needed, to reflect the Company's current assumptions regarding the period of performance. As of December 31, 2017, the Company had deferred revenue of $53.0 million related to the hemophilia A Pfizer Agreement. During the year ended December 31, 2017 the Company recognized revenue of $17.0 million related to the upfront fee that was received.

*C9ORF72 Research Collaboration and License Agreement*

On December 28, 2017, Sangamo entered into a Research Collaboration and License Agreement with Pfizer for the development and commercialization of potential gene therapy products that use zinc finger protein transcription factors ("ZFP-TFs") to treat amyotrophic lateral sclerosis and frontotemporal lobar degeneration, or ALS/ FTLD, linked to mutations of the C9ORF72 gene. Pursuant to this Pfizer Agreement, Sangamo will work together with Pfizer on a research program to identify, characterize and preclinically develop ZFP-TFs that bind to and specifically reduce expression of the mutant form of the C9ORF72 gene (the "ALS/ FTLD Pfizer Agreement"). This agreement was entered into as a separate and distinct agreement apart from the SB-525 Pfizer agreement. The Pfizer C9ORF72 agreement is related to research specific ZFP-TF gene therapy for the C9ORF72 gene, while the SB-525 Pfizer agreement was for the clinical stage development of AAV-based gene therapy products for hemophilia A.

Sangamo has granted Pfizer an exclusive, royalty-bearing, worldwide, sublicensable license under the Company's relevant patents and know-how to develop, manufacture and commercialize gene therapy products ("Licensed Products") that use resulting ZFP-TFs that satisfy pre-agreed criteria. During a specified period, neither Sangamo nor Pfizer will be permitted to research, develop, manufacture or commercialize outside of the collaboration any zinc finger proteins that specifically bind to the C9ORF72 gene.

Under the terms of the ALS/ FTLD Pfizer Agreement, Sangamo received a $12.0 million upfront payment from Pfizer. Each party will be responsible for the cost of its performance of the research program. Pfizer will be operationally and financially responsible for subsequent development, manufacturing and commercialization of Licensed Products. Sangamo is eligible to receive up to $60.0 million in development milestone payments from Pfizer if a Licensed Product achieves specified preclinical development, clinical development and first commercial sale milestones, and up to $90.0 million commercial milestone payments if annual worldwide net sales of Licensed Products reach specified levels. In addition, Pfizer will pay royalties to Sangamo that are an escalating tiered, mid- to high-single digit percentage of the annual worldwide net sales of Licensed Products. These royalty payments are subject to reduction due to patent expiration, entry of biosimilar products to the market and payments made under certain licenses for third party intellectual property. Sangamo did not recognize revenue related to this Pfizer agreement as the basic criteria for revenue recognition was not satisfied as of December 31, 2017.

***Collaboration and License Agreement with Bioverativ Inc. in Human Therapeutics***

In January 2014, the Company entered into a Global Research, Development and Commercialization Collaboration and License Agreement with Biogen (the "Bioverativ Agreement"), and in January 2017 this agreement was assigned by Biogen MA Inc. to Biogen's blood disorder spin-off, Bioverativ. Pursuant to the Bioverativ Agreement, Sangamo and Bioverativ will collaborate to discover, develop, seek regulatory approval for and commercialize therapeutics based on Sangamo's zinc finger DNA-binding protein ("ZFP") technology for beta-thalassemia and sickle cell disease ("SCD").

Under the Bioverativ Agreement, Sangamo and Bioverativ jointly conduct two research programs: the beta-thalassemia program and the SCD program. For the beta-thalassemia program, Sangamo is responsible for all discovery, research and development activities through the first human clinical trial for the first therapeutic developed under the Bioverativ Agreement for the treatment of beta-thalassemia. For the SCD program, both parties are responsible for research and development activities through the submission of an Investigational New Drug ("IND") application for a ZFP-based therapeutic intended to treat SCD. For both programs, Bioverativ is responsible for subsequent world-wide clinical development, manufacturing and commercialization of licensed products developed under the Bioverativ Agreement. At the end of specified research terms for each program or under certain specified circumstances, Bioverativ has the right to step in and take over any remaining activities of Sangamo. Furthermore, Sangamo has an option to co-promote in the United States any licensed products to treat beta-thalassemia and SCD developed under the Bioverativ Agreement, and Bioverativ agrees to compensate Sangamo for such co-promotion activities.

Sangamo received an upfront license fee of $20.0 million upon entering into the Bioverativ Agreement. In addition, the Company will also be eligible to receive $115.8 million in payments upon the achievement of specified clinical development and regulatory milestones, as well as $160.5 million in payments upon the achievement of specified sales milestones. Bioverativ reimburses Sangamo for agreed upon costs incurred in connection with research and development activities conducted by Sangamo. In addition, if products are commercialized under the Bioverativ Agreement, Bioverativ will pay Sangamo incremental royalties for each licensed product that are a tiered double-digit percentage of annual net sales of such product. To date, no milestone payments have been received and no products have been approved and therefore no royalty fees have been earned under the Bioverativ Agreement.

In January 2016, the parties agreed on an updated beta-thalassemia development plan and budget using the *BCL11A* erythroid enhancer target. In November 2016, Sangamo and Bioverativ agreed on an updated beta-thalassemia development plan and budget. As a result of this change, the Company updated the estimated performance period of the upfront license through June 2020, and updated the milestones to be received based on the updated schedule and targets under the Bioverativ Agreement.

All contingent payments under the Bioverativ Agreement, when earned, will be non-refundable and non-creditable. The Company has evaluated the contingent payments under the Bioverativ Agreement based on the authoritative guidance for research and development milestones and determined that certain of these payments meet the definition of a milestone and that all such milestones are evaluated to determine if they are considered substantive milestones. Milestones are considered substantive if they are related to events (i) that can be achieved based in whole or in part on either the Company's performance or on the occurrence of a specific outcome resulting from the Company's performance, (ii) for which there was substantive uncertainty at the date the agreement was entered into that the event would be achieved and (iii) that would result in additional payments being due to the Company. Accordingly, consideration received for the achievement of milestones that are determined to be substantive will be recognized as revenue in their entirety in the period when the milestones are achieved and collectability is reasonably assured. Revenue for the achievement of milestones that are not substantive will be recognized over the remaining period of the Bioverativ Agreement, assuming all other applicable revenue recognition criteria have been met.

Subject to the terms of the Bioverativ Agreement, Sangamo has granted Bioverativ an exclusive, royalty-bearing license, with the right to grant sublicenses, to use certain ZFP and other technology controlled by Sangamo for the purpose of researching, developing, manufacturing and commercializing licensed products developed under the Bioverativ Agreement. Sangamo has also granted Bioverativ a non-exclusive, world-wide, royalty free, fully paid license, with the right to grant sublicenses, under Sangamo's interest in certain other intellectual property developed pursuant to the Bioverativ Agreement.

The Company has identified the deliverables within the arrangement as a license to the technology and on-going research services activities. The Company concluded that the license is not a separate unit of accounting as it does not have stand-alone value to Bioverativ apart from the research services to be performed pursuant to the Bioverativ Agreement. As a result, the Company will recognize revenue from the upfront payment on a straight-line basis over a forty-four month estimated research term as of the November 2016 modification date, during which time the Company will perform research services. The estimated period of performance is reviewed quarterly and adjusted, as needed, to reflect the Company's current assumptions regarding the timing of its deliverables. As of December 31, 2017, the Company had deferred revenue of $4.6 million related to the Bioverativ Agreement.

Revenues recognized under the Bioverativ Agreement for the years ended December 31, 2017, 2016 and 2015 are as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Revenue related to Bioverativ Collaboration: | | | |
| Recognition of upfront fee | $ 1,769 | $ 2,321 | $ 6,176 |
| Research services | 10,489 | 6,565 | 7,769 |
| Total | $ 12,258 | $ 8,886 | $ 13,945 |

***Amended Collaboration and License Agreement with Shire International GmbH in Human Therapeutics***

In January 2012, the Company entered into a Collaboration and License Agreement with Shire (the "Shire Agreement "), pursuant to which the Company and Shire collaborate to research, develop and commercialize human therapeutics and diagnostics for monogenic diseases based on Sangamo's novel ZFP technology. This agreement was amended on September 1, 2015.

Under the original Shire Agreement, the Company and Shire agreed to develop potential human therapeutic or diagnostic products for seven gene targets. The initial four gene targets selected were blood clotting Factors VII, VIII, IX and X, and products developed for such initial gene targets would be used for treating or diagnosing hemophilia A and B. In June 2012, Shire selected a fifth gene target for the development of a ZFP therapeutic for Huntington's disease. Shire had the right, subject to certain limitations, to designate two additional gene targets. Pursuant to the Shire Agreement, the Company granted Shire an exclusive, world-wide, royalty-bearing license, with the right to grant sublicenses, to use Sangamo's ZFP technology for the purpose of developing and commercializing human therapeutic and diagnostic products for the gene targets.

Under the terms of the Shire Agreement, the Company was responsible for all research activities through the submission of an IND or European Clinical Trial Application (CTA), while Shire was responsible for clinical development and commercialization of products generated from the research program from and after the acceptance of an IND or CTA for the product. Shire reimbursed Sangamo for agreed upon internal and external program-related research costs. The Company received an upfront license fee of $13.0 million upon entering into the Shire Agreement in 2012. In 2014, Sangamo recognized a $1.0 million milestone payment related to the hemophilia program.

On September 1, 2015, the Shire Agreement was amended such that Shire agreed to return to Sangamo the exclusive, world-wide rights to gene targets for the development and commercialization of ZFP therapeutics for hemophilia A and B. Shire retains the rights and will continue to develop a ZFP therapeutic for Huntington's disease. Sangamo will provide certain target feasibility services, and upon Shire's request, certain research activities according to a research plan as agreed upon by both companies. Such research activities performed by Sangamo will be reimbursed by Shire. Shire's rights with respect to other targets contemplated in the original agreement revert to Sangamo. Under the revised agreement, each company is responsible for expenses associated with its own programs, and Shire will reimburse Sangamo for any ongoing services provided by Sangamo for Shire's programs. In 2015, Shire reimbursed Sangamo $3.4 million related to obligations prior to the amendment date which was recognized in revenue as the expense related to those obligations was incurred. Sangamo has granted Shire a right of first negotiation to license the hemophilia A and B programs developed by Sangamo under the amended agreement. Under the amended agreement, Shire does not have any milestone payment obligations with respect to the retained programs, but it is required to pay single digit percentage royalties to Sangamo, up to a specified maximum cap, on the commercial sales of ZFP therapeutic products from such programs. Under the Shire Agreement, Sangamo has full control over, and full responsibility for the costs of, the hemophilia programs returned to us, subject to certain diligence obligations and Shire's right of first negotiation to obtain a license to such programs under certain circumstances. The Company is required to pay single digit percentage royalties to Shire, up to a specified maximum cap, on commercial sales of ZFP therapeutic products from such returned programs.

The Company has concluded that the license is not a separate unit of accounting as it does not have stand-alone value to Shire apart from the research services to be performed pursuant to the Shire amendment. The Company satisfied the deliverables and research services responsibilities within the amended arrangement which were completed in 2017. As a result, the Company recognized the remaining $2.3 million of deferred revenue from the upfront payment during the year ended December 31, 2017.

Revenues recognized under the Shire Agreement for the years ended December 31, 2017, 2016 and 2015, were as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Revenue related to Shire Collaboration: | | | |
| Recognition of upfront fee | $ 2,333 | $ 2,181 | $ 2,167 |
| Research services | 116 | 1,096 | 13,584 |
| Total | $ 2,449 | $ 3,277 | $ 15,751 |

***Agreement with Sigma-Aldrich Corporation (Sigma) in Laboratory Research Reagents, Transgenic Animal and Commercial Protein Production Cell-line Engineering***

In 2007, Sangamo entered into a license agreement with Sigma to provide Sigma with access to Sangamo's proprietary ZFP technology and the exclusive right to use the technology to develop and commercialize research reagent products and services in the research field, excluding certain agricultural research uses that Sangamo previously licensed to DAS. Sangamo developed laboratory research reagents using its ZFP technology over a three year research services period. Sangamo has since transferred the ZFP manufacturing technology to Sigma.

In October 2009, Sangamo expanded its license agreement with Sigma. In addition to the original terms of the license agreement, Sigma received exclusive rights to develop and distribute ZFP-modified cell lines for commercial production of protein pharmaceuticals and certain ZFP-engineered transgenic animals for commercial applications. Under the terms of the agreement, Sigma made an upfront cash payment of $20.0 million consisting of a $4.9 million purchase of 636,133 shares of Sangamo common stock, valued at $4.9 million, and a $15.1 million upfront license fee. Sangamo is also eligible to receive commercial license fees of $5.0 million based upon a percentage of net sales and sublicensing revenue and thereafter a reduced royalty rate of 10.5% of net sales and sublicensing revenue. In addition, upon the achievement of certain cumulative commercial milestones, Sigma will make milestone payments to Sangamo up to an aggregate of $25.0 million. Sangamo does not have additional ongoing performance obligations under the agreement.

Revenues recognized under the agreement with Sigma for the years ended December 31, 2017, 2016 and 2015, were as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Revenue related to Sigma Collaboration: | | | |
| Royalty revenues | $ 452 | $ 137 | $ 390 |
| License fee revenues | 267 | 1,140 | 4,463 |
| Total | $ 719 | $ 1,277 | $ 4,853 |

***Agreement with Dow AgroSciences in Plant Agriculture***

In 2005, Sangamo entered into an exclusive commercial license with Dow AgroSciences, LLC, or DAS, with an initial three year research term. Under this agreement, Sangamo is providing DAS with access to its proprietary ZFP technology and the exclusive right to use the technology to modify the genomes or alter the nucleic acid or protein expression of plant cells, plants, or plant cell cultures. Sangamo has retained rights to use plants or plant-derived products to deliver ZFP TFs or ZFNs into humans or animals for diagnostic, therapeutic or prophylactic purposes. In 2008 DAS exercised its option and obtained a commercial license to sell products incorporating or derived from plant cells generated using the Company's ZFP technology. The exercise of the option triggered a one-time commercial license fee of $6.0 million, payment of the remaining $2.3 million of the previously agreed upon $4.0 million in research milestones, development and commercialization milestone payments for each product, and royalties on sales of products. Furthermore, DAS has the right to sublicense Sangamo's ZFP technology to third parties for use in plant cells, plants, or plant cell cultures, and Sangamo will be entitled to 25% of any cash consideration received by DAS under such sublicenses. In December 2010 the Company amended its agreement with DAS to extend the period of reagent manufacturing services and research services through December 31, 2012.

The agreement with DAS also provides for minimum sublicense fees each year due to Sangamo every October, provided the agreement is not terminated by DAS. Annual fees range from $250,000 to $3.0 million and total $25.3 million over 11 years unless terminated at any time by DAS. The Company does not have any performance obligations. In the event of any termination of the agreement, all rights to use the Company's ZFP technology will revert to Sangamo, and DAS will no longer be permitted to practice Sangamo's ZFP technology or to develop or, except in limited circumstances, commercialize any products derived from the Company's ZFP technology.

Revenues under the agreement with DAS were $3.0 million during 2017 and $5.1 million and $3.0 million during 2016 and 2015, respectively.

**NOTE 6 – ACQUISITION OF CEREGENE**

In August 2013, Sangamo acquired all the outstanding shares of Ceregene, a privately held biotechnology company focused on the development of AAV gene therapies. The acquired assets included certain intellectual property rights relating to manufacturing of AAV, and toxicology and data from Ceregene's human clinical trials. The acquisition closed in October 2013 (the Closing Date).

The aggregate consideration transferred or transferable by Sangamo to former Ceregene stockholders at closing consisted of 100,000 shares of Sangamo common stock, with an approximate fair value of $1.2 million and a contingent earn-out of $1.5 million on the Closing Date. The $1.8 million fair value of the contingent earn-out liability was reduced to zero in March 2015 upon Sangamo's decision not to pursue development of Ceregene's technology as discussed below.

***Intangible Assets Acquired***

Intangible assets acquired included In-Process Research and Development (IPR&D), which consisted of Ceregene's two clinical product candidates, CERE-110 for the treatment of AD and CERE-120 for the treatment of Parkinson's disease. The Company determined that the combined Closing Date estimated fair values of CERE-110 and CERE-120 was $1.9 million. In the first quarter of 2015, the Company decided to discontinue the CERE-110 and CERE-120 clinical trial programs. As such, the probability of achieving projected revenues and cash flows associated with these programs were adversely affected. The Company does not believe the programs have an alternative future use for itself or other market participants. Accordingly, during the year ended December 31, 2015, the Company recognized a $1.9 million impairment charge related to these assets.

Intangible assets also included $1.6 million in goodwill, the excess of the consideration transferred over the fair values assigned to the assets acquired and liabilities assumed. Goodwill represents benefits that Sangamo believes will result from combining its operations with the operations of Ceregene and any intangible assets that do not qualify for separate recognition, as well as any future, yet unidentified products. The Company tests goodwill for impairment on an annual basis or sooner, if deemed necessary. There have been no changes to goodwill since the Closing Date, and no impairment has been recognized.

**NOTE 7 – PROPERTY AND EQUIPMENT**

Property and equipment consist of the following (in thousands):

| | December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Laboratory equipment | $ 7,572 | $ 6,206 |
| Furniture and fixtures | 1,494 | 636 |
| Leasehold improvements | 3,425 | 1,330 |
| Buildings | 3,876 | 3,876 |
| Total | 16,367 | 12,048 |
| Less accumulated depreciation and amortization | (6,951) | (5,639) |
| Construction in Progress | 21,650 | 148 |
| | $ 31,066 | $ 6,557 |

Depreciation and amortization expense was $1.5 million in 2017, $1.0 million in 2016 and $1.0 million in 2015. In 2017 the Company capitalized $20.9 million related to the fair value of the Brisbane building and $0.3 million of construction costs in Construction in Progress under the build-to-suit lease guidance (see Note 14). In 2016 the Company capitalized $3.9 million related to the costs of the Richmond construction as a build-to-suit property within property and equipment, net, and recognize a corresponding build-to-suit lease obligation for the same amount. Both buildings will depreciate over the period of their lease, respectively.

**NOTE 8 – COMMITMENTS AND CONTINGENCIES**

Sangamo occupies office and laboratory space under operating leases in Richmond, California. In August 2013, Sangamo amended its lease agreement for our corporate headquarters wherein the lease was extended through August 2019. The Company has three additional properties located in Richmond, CA. This includes two leases, one to occupy approximately 7,700 square feet of research and office space that expires in August 2019, and another to occupy approximately 6,200 square feet of office space that expires in July 2021. Sangamo also has two build-to-suit leases to occupy approximately 41,400 square feet of space in Richmond that expires in December 2021 and approximately 87,700 square feet of space in Brisbane that expires in May 2029. Rent expense related to these lease agreements was $1.1 million, $1.0 million, and $0.9 million for 2017, 2016 and 2015, respectively. Future minimum payments under lease obligations at December 31, 2017 consist of the following (in thousands):

| Fiscal Year: | |
|---|---|
| 2018 | $ 1,685 |
| 2019 | 2,925 |
| 2020 | 3,795 |
| 2021 | 3,798 |
| 2022 | 3,335 |
| Thereafter | 23,896 |
| Total minimum payments | $ 39,434 |

For 2018, the company is committed to spend $8.8 million for tenant improvements related to the Brisbane build-to-suit lease and $8.7 million as part of our services agreement with Brammer Bio MA, LLC, or Brammer, to provide dedicated capacity to supply our preclinical and clinical programs. The Company also has $5.2 million of license commitments related to its intellectual property.

***Contingencies***

Sangamo is not party to any material pending legal proceeding. From time to time, we may be involved in legal proceedings arising in the ordinary course of business.

**NOTE 9 – STOCKHOLDERS' EQUITY**

***Preferred Stock***

The Company has 5,000,000 preferred shares authorized, which may be issued at the discretion of the Company's Board of Director's discretion.

***Common Stock***

On June 26, 2017, Sangamo completed an underwritten public offering of its common stock, in which the Company sold an aggregate of 11.5 million shares of its common stock at a public offering price of $7.25 per share. The net proceeds to Sangamo from the sale of shares in this offering, after deducting underwriting discounts and commissions and other offering expenses, were approximately $78.1 million.

***At-the-Market Offering Agreements***

On December 7, 2016, we entered into an "at the market" offering agreement with an investment bank, pursuant to which we may issue and sell from time to time up to $75.0 million of our common stock through the bank as the sales agent ("ATM Agreement"). Under the ATM Agreement, if we decide to sell shares, the sales agent will use its commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us. Sales of the common stock, if any, will be made at market prices by any method that is deemed to be an "at the market offering" as defined in Rule 415 under the Securities Act, as amended, including sales made directly on The Nasdaq Global Market and any other trading market for the common stock, and sales to or through a market maker other than on an exchange. In addition, with our prior written consent, the sales agent may also sell our common stock in negotiated transactions.

On May 26, 2017, the Company entered into an Amended and Restated At-the-Market Offering Program Sales Agreement (the "2017 ATM Agreement") with an investment bank pursuant to which the Company may issue and sell from time to time after the date of the 2017 ATM Agreement, shares of its common stock having an aggregate offering price of up to $75.0 million through the

investment bank acting as the Company's sales agent. Under the 2017 ATM Agreement, if the Company decides to sell shares, the Company will notify the sales agent, and the sales agent will use its commercially reasonable efforts to sell on the Company's behalf all of the shares of common stock requested to be sold. Sales of the Company's common stock, if any, will be made at market prices by any method that is deemed to be an "at the market offering" as defined in Rule 415 under the Securities Act, as amended, including sales made directly on The NASDAQ Global Select Market and sales to or through a market maker other than on an exchange. In addition, with the Company's prior written consent, the sales agent may also sell shares of its common stock in negotiated transactions under the 2017 ATM Agreement. During the three months ended March 31, 2017, the Company issued a total of 871,149 shares of its common stock under the original At-the-Market Offering Program Sales Agreement entered into with the sales agent in December 2016, and received net proceeds of $3.4 million, after deducting offering expenses, including $0.1 million of commission paid to the sales agent. These shares were inadvertently sold under a registration statement filed with the SEC that had in fact expired prior to the time the shares were sold. Consequently, the Company may be subject to claims for rescission by purchasers who purchased shares of common stock under the ATM Agreement in March 2017. Under Section 12(a)(1) of the Securities Act, a purchaser of security in a transaction made in violation of Section 5 of the Securities Act may obtain recovery of the consideration paid in connection with its purchase, plus statutory interest, or, if it had already sold the shares, recover damages resulting from its purchase. While the Company believes it is unlikely that a successful claim will be asserted against the Company by any purchasers who purchased shares of common stock under the ATM Agreement in March 2017, the Company cannot guarantee that no such legal claims will be asserted against the Company by any purchasers. In addition, the Company could become subject to enforcement actions and/or penalties and fines by federal authorities, and the Company is unable to predict the likelihood of any such enforcement actions being brought, or the amount of any such potential penalties or fines.

***Stock Incentive Plan***

In April 2013 Sangamo's Board of Directors adopted, subject to stockholder approval, the Company's 2013 Stock Incentive Plan (the 2013 Plan) as the successor to the Company's 2004 Stock Incentive Plan (the 2004 Plan). At the Annual Meeting of Stockholders held on June 12, 2013, the 2013 Plan was approved by the Company's stockholders and became effective. In connection with the approval by stockholders of the 2013 Plan, outstanding awards under the 2004 Plan were transferred to the 2013 Plan. The 2004 Plan was terminated and no further awards will be made pursuant to the 2004 Plan.

Under the 2013 Plan, the exercise price per share of options granted will generally not be less than 100 percent of the fair value per share of common stock on the grant date, and the option term will not exceed ten years. If the person to whom the option is granted is a 10 percent stockholder, and the option granted qualifies as an Incentive Stock Option Grant, then the exercise price per share will not be less than 110 percent of the fair value per share of common stock on the grant date, and the option term will not exceed five years. Options granted under the 2013 Plan generally vest over four years at a rate of 25 percent one year from the grant date and one thirty-sixth per month thereafter and expire ten years after the grant, or earlier upon employment termination. Certain options previously granted under the 2004 Plan to the Company's non-employee directors are structured so that they may be exercised prior to vesting, with the related shares subject to Sangamo's right to repurchase any shares that have not vested pursuant to the vesting schedule in effect for such award at the exercise price paid if the option holder's board service terminates. Approximately 14.1 million shares were initially reserved for issuance under the 2013 Plan, including 9.7 million shares of common stock subject to outstanding awards previously granted under the 2004 Plan that were transferred to the 2013 Plan, and an additional 4.4 million shares of common stock.

The number of shares of common stock reserved for issuance under the 2013 Plan will be reduced: (i) on a 1-for-1 basis for each share of common stock subject to a stock option or stock appreciation right granted under the plan, (ii) on a 1-for-1 basis for each share of common stock issued pursuant to a full value award granted under the plan prior to the plan effective date, and (iii) by a fixed ratio of 1.33 shares of common stock for each share of common stock issued pursuant to a full-value award granted under the plan on or after the plan effective date.

Shares subject to any outstanding options or other awards under the 2013 Plan that expire or otherwise terminate prior to the issuance of the shares subject to those options or awards will be available for subsequent issuance under the 2013 Plan. Any unvested shares issued under the 2013 Plan that the Company subsequently purchases, pursuant to repurchase rights under the 2013 Plan, will be added back to the number of shares reserved for issuance under the 2013 Plan on a 1-for-1 basis or a 1.33-for-1 basis (depending on the ratio at which the share reserve was debited for the original award) and will accordingly be available for subsequent issuance in accordance with the terms of the plan.

In June 2015 Sangamo's stockholders were asked to vote to approve the amendment and restatement of our 2013 Stock Incentive Plan in order to increase the number of shares in our common stock reserved for issuance over the term of the 2013 Plan by 5,300,000 shares. At the Annual Meeting of Stockholders held on June 22, 2015, the amendment and restatement of our 2013 Stock Incentive Plan was approved by the Company's stockholders and became effective.

On November 10, 2017, the Compensation committee of the Company's Board of Directors approved the amendment and restatement of the Company's Amended and Restated 2013 Stock Incentive Plan, to reserve an additional one million shares of the Company's common stock to be used exclusively for grants of awards to individuals who were not previously employees or non-employee directors of the Company (or following a bona fide period of non-employment with the Company), as an inducement material to each such individual's entry into employment with us within the meaning of Rule 5635(c)(4) of the NASDAQ Listing Rules, or Rule 5635(c)(4). The 2013 Plan was amended and restated by the Compensation Committee without stockholder approval pursuant to Rule 5635(c)(4).

***Employee Stock Purchase Plan***

Sangamo's 2010 Employee Stock Purchase Plan ("Purchase Plan"), which supersedes the Company's 2000 Employee Stock Purchase Plan, provides a total reserve of 2,100,000 shares of common stock for issuance under the Purchase Plan. Eligible employees may purchase common stock at 85 percent of the lesser of the fair market value of Sangamo's common stock on the first day of the applicable two-year offering period or the last day of the applicable six-month purchase period.

***Stock Option Activity***

A summary of Sangamo's stock option activity is as follows:

| | Number of Shares | Weighted-Average Exercise per Share Price | Weighted Average Remaining Contractual Term (In years) | Aggregate Intrinsic Value (In thousands) |
|---|---|---|---|---|
| Options outstanding at December 31, 2016 | 9,256,506 | $ 8.31 | | |
| Options granted | 3,091,125 | $ 6.48 | | |
| Options exercised | (2,030,815) | $ 7.76 | | |
| Options canceled | (2,029,360) | $ 8.28 | | |
| Options outstanding at December 31, 2017 | 8,287,456 | $ 7.77 | 6.69 | $ 71,658 |
| Options vested and expected to vest at December 31, 2017 | 8,287,456 | $ 7.77 | 6.69 | $ 71,658 |
| Options exercisable at December 31, 2017 | 3,881,078 | $ 8.99 | 4.13 | $ 28,864 |

Newly created shares are issued upon exercises of options. There were no shares subject to Sangamo's right of repurchase as of December 31, 2017. The intrinsic value of options exercised was $12.3 million, $0.1 million and $6.4 million during 2017, 2016 and 2015, respectively.

At December 31, 2017, the aggregate intrinsic values of outstanding and exercisable options were $71.7 million and $28.9 million, respectively. The aggregate intrinsic value of options vested and expected to vest as of December 31, 2017, 2016 and 2015 was $71.7 million, $0.0 million and $14.0 million, respectively.

The following table summarizes information with respect to stock options outstanding at December 31, 2017:

| Range of Exercise Price | Options Outstanding and Exercisable | | Options Exercisable | |
|---|---|---|---|---|
| | Number of Shares of common stock subject to options | Weighted Average Remaining Contractual Life (In years) | Number of Shares of common stock subject to options | Weighted Average Exercise Price |
| $2.55 – $3.45 | 612,318 | 7.92 | 214,920 | $ 3.13 |
| $3.50 – $3.50 | 1,527,625 | 9.07 | — | $ — |
| $3.55 – $5.41 | 1,212,567 | 5.24 | 672,930 | $ 5.34 |
| $5.42 – $7.07 | 1,501,051 | 5.53 | 967,506 | $ 6.11 |
| $7.20 – $9.41 | 1,199,546 | 7.17 | 551,162 | $ 9.06 |
| $9.45 – $13.35 | 885,599 | 5.52 | 659,946 | $ 11.92 |
| $13.54 – $15.00 | 1,148,250 | 6.26 | 668,752 | $ 14.07 |
| $15.11 – $18.26 | 178,000 | 7.31 | 124,561 | $ 16.41 |
| $19.51 – $19.51 | 10,000 | 6.14 | 9,583 | $ 19.51 |
| $19.80 – $19.80 | 12,500 | 6.23 | 11,718 | $ 19.80 |
| | 8,287,456 | 6.69 | 3,881,078 | $ 8.99 |

***Restricted Stock Units***

During 2017, 2016 and 2015, the Company awarded 12,600, 60,000, and 446,000 Restricted Stock Units (RSUs), respectively. The RSUs awarded in 2017, 2016 and 2015 had an average grant date fair value per award of $15.85, $5.16 and $9.45, respectively. These awards generally vest as follows: one-third of the award will vest in a series of three successive equal annual installments. The aggregate fair value of RSUs vested during 2017, 2016 and 2015 was $1.2 million, $4.8 million and $4.1 million, respectively.

A summary of Sangamo's RSU activity is as follows:

| | Number of Shares | Weighted Average Remaining Contractual Term (In years) | Aggregate Intrinsic Value (In thousands) |
|---|---|---|---|
| RSUs outstanding at December 31, 2016 | 321,816 | | |
| RSUs awarded | 12,600 | | |
| RSUs released | (112,917) | | |
| RSUs forfeited | (141,327) | | |
| RSUs outstanding at December 31, 2017 | 80,172 | 0.90 | $ 1,315 |
| RSUs vested and expected to vest at December 31, 2017 | 80,172 | 0.90 | $ 1,315 |

RSUs that vested in 2017, 2016 and 2015 were net-share settled such that the Company withheld shares with value equivalent to the employees' minimum statutory obligation for the applicable income and other employment taxes, and remitted the cash to the appropriate taxing authorities. The total shares withheld were approximately 42,243, 165,181, and 172,807 for 2017, 2016 and 2015, respectively and were based on the value of the RSUs on their respective issuance dates as determined by the Company's closing stock price. Total payments for the employees' tax obligations to taxing authorities were $0.7 million, $0.8 million and $1.5 million in 2017, 2016 and 2015, respectively and are reflected as a financing activity within the accompanying consolidated statements of cash flows. These net-share settlements had the effect of share repurchases by the Company as they reduced and retired the number of shares that would have otherwise been issued as a result of the vesting and did not represent an expense to the Company.

As of December 31, 2017, there were 3,601,633 shares reserved for future awards under the Company's 2013 Plan and 835,674 shares of common stock reserved for future issuance under the Purchase Plan.

**NOTE 10 – INCOME TAXES**

The benefit for income taxes consisted of the following (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Benefit for income taxes: | | | |
| Current: | | | |
| Federal | $ — | $ — | $ — |
| State | — | — | — |
| Subtotal | — | — | — |
| Deferred: | | | |
| Federal | $ — | $ (12) | $ (5,563) |
| State | — | (2) | (159) |
| Subtotal | — | (14) | (5,722) |
| Income tax benefit | $ — | $ (14) | $ (5,722) |

The difference between the benefit for income taxes and the amount computed by applying the federal statutory income tax rate (34%) to loss before taxes is explained as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Tax at federal statutory rate | $ (18,553) | $ (24,369) | $ (15,785) |
| State taxes, net | 795 | (747) | 4,840 |
| Federal Rate Change | 53,045 | — | — |
| Non-deductible stock compensation | 2,120 | 2,781 | 1,085 |
| Research credits | (869) | (1,424) | (814) |
| Change in valuation allowance | (36,575) | 23,773 | 5,043 |
| Other | 37 | (28) | (91) |
| Income tax benefit | $ — | $ (14) | $ (5,722) |

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets are as follows (in thousands):

| | December 31 , | |
|---|---|---|
| | 2017 | 2016 |
| ***Assets:*** | | |
| Deferred tax assets: | | |
| Net operating loss carryforwards | $ 91,308 | $ 114,222 |
| Research and development tax credit carryforwards | 15,147 | 12,518 |
| Stock-based compensation | 3,168 | 8,565 |
| Deferred revenue | 934 | 2,918 |
| Other | 2,276 | 3,492 |
| Total deferred tax asset | 112,833 | 141,715 |
| Valuation allowance | 112,833 | 141,715 |
| Net deferred tax assets | $ — | $ — |
| ***Liabilities:*** | | |
| Net deferred tax liability related to intangible assets | — | — |
| Total deferred tax liability | $ — | $ — |

In October 2013, we acquired Ceregene. The Company recorded goodwill and intangible assets as part of accounting for the acquisition of Ceregene. A portion of the intangible assets acquired were for the use in a particular research and development project IPR&D and are considered indefinite-lived assets with no tax basis. In 2015, the Company impaired these intangible assets and reversed the corresponding deferred tax liability.

In 2015 the Company received a $14.5 million Section 16(b) disgorgement settlement that was recognized as additional paid-in capital. The disgorgement settlement was recognized net of taxes of $9.5 million, which resulted in an income tax benefit of $5.0 million being recognized in the accompanying consolidated statements of operations for the year ended December 31, 2015.

The changes in the fair value of the unrealized gain/loss on securities investment are recorded as a component of accumulated other comprehensive income, net of a provision for income taxes.

A valuation allowance is recorded when it is more likely than not that all or some portion of the deferred income tax assets will not be realized. We regularly assess the need for a valuation allowance against our deferred income tax assets by considering both positive and negative evidence related to whether it is more likely than not that our deferred income tax assets will be realized. In evaluating our ability to recover our deferred income tax assets within the jurisdiction from which they arise, we consider all available positive and negative evidence, including scheduled reversals of deferred income tax liabilities, projected future taxable income, tax-planning strategies, and results of recent operations. Accordingly, based upon the Company's analysis of these factors the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance (decreased) increased by $(28.9) million, $23.8 million and $5.0 million for the years ended December 31, 2017, 2016 and 2015, respectively. As of December 31, 2017, Sangamo had net operating loss carryforwards for federal and state income tax purposes of approximately $475 million and $142 million, respectively. If not utilized, the net federal and state operating loss carryforwards will expire in 2018 and 2017, respectively. The Company also has federal and state research tax credit carryforwards of $10.8 million and $11.8 million, respectively. The federal research credits will begin to expire in 2018 while the state research credits have no expiration date. Utilization of the Company's net operating loss carryforwards and research tax credit carryforwards may be subject to substantial annual limitations due to the ownership change limitations provided by the Internal Revenue Code and similar state provisions. The annual limitation could result in the expiration of the net operating loss carryforwards and research tax credit carryforwards before utilization.

On December 22, 2017, President Trump signed the Tax Cuts and Jobs Act ("Tax Reform") into legislation. The Tax Reform makes significant changes to the US corporate income tax law including, but not limited to, (1) reducing the U.S. federal corporate tax rate to 21% from 35% and (2) requiring a one-time mandatory transition tax on previously deferred foreign earnings of US subsidiaries. Under ASC 740, the effects of changes in tax rates and laws are recognized in the period in which the new legislation is enacted. In the case of US federal income taxes, the enactment date is the date the bill becomes law. With respect to this legislation, we expect no financial statement impact due to the Company's valuation allowance. The Company performed a re-measurement of deferred tax assets and liabilities as a result of the decrease in the corporate Federal income tax rate from 35% to 21%. In addition to the reduction of U.S. federal corporate tax rate, the Company has also considered the impact of the foreign transition tax for which it has estimated that it would not need to accrue any amounts.

In December 2017, the Securities and Exchange Commission staff issued Staff Accounting Bulletin No.118 (SAB 118) to provide guidance on the application of the Tax Reform when a company does not have the necessary information available, prepared, or analyzed in reasonable to detail to reflect the effects of the Tax Reform. SAB 118 provides guidance for companies under the three scenarios (1) measurement of certain income tax effects is complete, (2) measurement of certain income tax effect can be reasonably estimated, and (3) measurement of certain income tax effects cannot be reasonably estimated. Companies are to complete the accounting under ASC 740 in regards to the Tax Reform within a measurement period that does not extend one year from the date of enactment (i.e., December 22, 2018). In accordance with SAB 118, companies must reflect the tax effects of the Tax Reform for which the accounting under 740 is complete. If certain income tax effect can be reasonably estimated, then the companies must report provisional amounts in the reporting period in which the companies can determine the reasonable estimate during the measurement period. In the case that certain income tax effects cannot be reasonably estimated, companies do not have to report effects of the Tax Reform. However, they should continue to apply ASC 740 based on the rules before the enactment of the Tax Reform and report any income tax effects in the first reporting period in which reasonable estimates become available.

We expect the new law to significantly reduce our tax rate in future periods, and our tax footnote reflects the effects of a Federal tax rate reduction net of our valuation allowance, which resulted in a net overall reduction of $0.

The final transition impacts of the Tax Act may differ from the above estimate, possibly materially, due to, among other things, changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act, any changes in accounting standards for income taxes or related interpretations in response to the Tax Act, or any updates or changes to estimates the company has utilized to calculate the transition impacts, including impacts from changes to current year earnings estimates and foreign exchange rates of foreign subsidiaries. In accordance with SAB 118, the Company is allowed a measurement period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. We currently anticipate finalizing and recording any resulting adjustments by year ending December 31, 2018.

The Company files federal and state income tax returns with varying statutes of limitations. The tax years from 2002 forward remain open to examination due to the carryover of net operating losses or tax credits. The Company also files a UK income tax return, and the tax years from 2008 and thereafter remain open to examination.

The Company's practice is to recognize interest and/or penalties related to income tax matters in income tax expense. As of December 31, 2017, the Company had no accrued interest and/or penalties. The unrecognized tax benefits may change during the next year for items that arise in the ordinary course of business. In the event that any unrecognized tax benefits are recognized, the effective tax rate will not be affected.

The following table summarizes the activity related to the Company's unrecognized tax benefits (in thousands):

| | December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Beginning balance | $ 5,045 | $ 8,330 | $ 3,438 |
| Additions based on tax positions related to the current year | 622 | 1,023 | 557 |
| Additions for tax positions of prior years | (8) | 27 | 4,335 |
| Reductions for tax positions of prior years | — | (4,335) | — |
| Ending balance | $ 5,659 | $ 5,045 | $ 8,330 |

**NOTE 11 – ACCOUNTS PAYABLE AND ACCRUED LIABILITIES**

Accounts payable and accrued liabilities consist of the following (in thousands):

| | December 31 , | |
|---|---|---|
| | 2017 | 2016 |
| Accounts payable | $ 16 | $ 2,580 |
| Accrued research and development expenses | 7,898 | 2,887 |
| Accrued professional fees | 1,318 | 270 |
| Deferred rent | 417 | 498 |
| Other | 1,386 | 26 |
| Total accounts payable and accrued liabilities | $ 11,035 | $ 6,261 |

**NOTE 12 – EMPLOYEE BENEFIT PLAN**

The Company sponsors a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code covering all full-time employees (Sangamo 401(k) Plan). The Sangamo 401(k) Plan is intended to qualify under Section 401 of the Internal Revenue Code.

The Company matched employee contributions equal to 50% for the first 8% in 2017 and 6% in both 2016 and 2015, respectively, up to a limit of $4,000 in 2017 and $3,000 in both 2016 and 2015, respectively. Matching funds are fully vested when contributed. Contributions to the Sangamo 401(k) Plan by the Company were $0.5 million, $0.3 million, and $0.3 million for the years ended December 31, 2017, 2016 and 2015, respectively.

**NOTE 13 – QUARTERLY FINANCIAL DATA (UNAUDITED)**

The following table sets forth certain unaudited quarterly financial data for the eight quarters ended December 31, 2016. The unaudited information set forth below has been prepared on the same basis as the audited information contained herein and includes all adjustments necessary to present fairly the information set forth. The operating results for any quarter are not indicative of results for any future period. All data is in thousands except per share data.

| | 2017 | | | | 2016 | | | |
|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Revenues | $ 3,425 | $ 8,253 | $ 11,812 | $ 13,077 | $ 3,942 | $ 3,702 | $ 2,823 | $ 8,922 |
| Expenses | $ 20,217 | $ 21,021 | $ 24,847 | $ 26,843 | $ 20,623 | $ 30,544 | $ 22,029 | $ 18,752 |
| Net loss | $ (16,632) | $ (12,491) | $ (12,354) | $ (13,091) | $ (16,494) | $ (26,575) | $ (18,965) | $ (9,624) |
| Net loss per share | $ (0.23) | $ (0.17) | $ (0.15) | $ (0.15) | $ (0.23) | $ (0.38) | $ (0.27) | $ (0.14) |

**NOTE 14 – BUILD-TO-SUIT LEASE**

*Brisbane Build-to-Suit Lease*

In November 2017, the Company entered into a long-term property lease which includes construction by the lessor of a building with approximately 87,700 square feet of space, in Brisbane, California. Substantial completion of the building is estimated to occur in the last quarter of 2018. The lease agreement expires in May 2029, approximately ten years after substantial completion of the building. A letter of credit for $3.5 million was established as the deposit and is classified within other noncurrent assets in the financial statements. The Company has two options to extend the lease term for up to a combined additional ten years.

The Company is deemed, for accounting purposes only, to be the owner of the entire project including the building shell, even though it is not the legal owner as a result of the cold shell condition of the building and involvement in the construction process. In connection with the Company's accounting for this transaction, the Company capitalized the costs of construction as a build-to-suit property within property and equipment, net, and recognize a corresponding build-to-suit lease obligation, including interest. Fair value of the building was estimated at $20.9 million using comparable market prices per square foot for similar space for public real estate transactions in the surrounding area and is considered a Level 2 fair value measurement. As of December 31, 2017, $21.2 million was capitalized with a corresponding build-to-suit lease obligation recognized related to this lease for the building and construction costs.

*Point Pinole Build-to-Suit Lease*

In December 2015, the Company entered into a long-term property lease which includes construction by the lessor of a building with approximately 41,400 square feet of space, in Richmond, California. Substantial completion of the building was accomplished in December 2016 at which time the lease commenced. The lease agreement expires in December 2021, five years after substantial completion of the building. The Company has two options to extend the lease term for up to a combined additional ten years.

The Company is deemed, for accounting purposes only, to be the owner of the entire project including the building shell, even though it is not the legal owner. In connection with the Company's accounting for this transaction, the Company capitalized the costs of construction as a build-to-suit property within property and equipment, net, and recognize a corresponding build-to-suit lease obligation for the same amount. As of December 31, 2016, $3.9 million of costs were capitalized in buildings with a corresponding build-to-suit lease obligation recognized related to this lease.

Construction has completed on the facility and as such a portion of the monthly lease payment is allocated to land rent and recorded as an operating lease expense and the non-interest portion of the amortized lease payments to the landlord related to the rent of the building is applied to reduce the build-to-suit lease obligation.

**NOTE 15 – CLAIMS SETTLEMENT**

In September 2015, the Company received $14.5 million as a settlement with certain institutional investors that were beneficial owners of Sangamo's common stock related to the disgorgement of short-swing profits pursuant to Section 16(b) of the Securities Exchange Act of 1934, as amended. The settlement of $9.5 million, net of a $5.0 million income tax benefit and certain expenses, was recognized as additional paid-in capital.

**NOTE 16 – SUBSEQUENT EVENT**

In February 2018, the Company entered into a Collaboration and License Agreement with Kite Pharma, Inc. ("Kite"), a wholly-owned subsidiary of Gilead Sciences, Inc. ("Gilead"), for the research, development and commercialization of potential engineered cell therapies for cancer. The Company will work together with Kite on a research program under which the Company ZFNs and AAVs to disrupt and insert certain genes in T cells and NK cells, including the insertion of genes that encode CARs, T-cell receptors ("TCRs") and NK cell receptors ("NKRs") directed to mutually agreed targets. Kite will be responsible for all clinical development and commercialization of any resulting products. Except for confidentiality obligations and certain representations, warranties and covenants, which are effective upon execution, the effectiveness of the Kite agreement is subject to the expiration or termination of all applicable waiting periods under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended and other customary closing conditions.

Under the terms of the Kite agreement, the Company will, upon the effectiveness of the Kite agreement, receive a $150 million upfront payment from Kite. Kite will reimburse the Company's direct costs to conduct the joint research program under the Kite agreement, and Kite will be operationally and financially responsible for all subsequent development, manufacturing and commercialization of licensed products. The Company is also eligible to receive contingent development- and sales-based milestone payments that could total up to $3.01 billion if all of the specified milestones set forth in the Kite agreement are achieved. Of this amount, approximately $1.26 billion relates to the achievement of specified research, clinical development, regulatory and first

commercial sale milestones, and approximately $1.75 billion relates to the achievement of specified sales-based milestones if annual worldwide net sales of licensed products reach specified levels. Each development- and sales-based milestone payment is payable (i) only once for each licensed product, regardless of the number of times that the associated milestone event is achieved by such licensed product, and (ii) only for the first ten times that the associated milestone event is achieved, regardless of the number of licensed products that may achieve such milestone event. In addition, the Company will be entitled to receive escalating, tiered royalty payments with a percentage in the mid-single digits based on potential future annual worldwide net sales of licensed products. These royalty payments will be subject to reduction due to patent expiration, entry of biosimilar products to the market and payments made under certain licenses for third-party intellectual property. At this time the Company is assessing the accounting impact of the agreement.

## ITEM 9 – CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

## ITEM 9A – CONTROLS AND PROCEDURES

### Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Under the supervision of our principal executive officer and principal financial officer, we evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of December 31, 2017. Based on that evaluation, as of December 31, 2017, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level.

### Inherent Limitations on Controls and Procedures

Our management, including the principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures and our internal control over financial reporting will prevent all error and all fraud. A control system, no matter how well designed and operated, can only provide reasonable assurances that the objectives of the control system are met. The design of a control system reflects resource constraints; the benefits of controls must be considered relative to their costs. Because there are inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, for our company have been or will be detected. As these inherent limitations are known features of the disclosure and financial reporting processes, it is possible to design into the processes safeguards to reduce, though not eliminate, these risks. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls is based in part upon certain assumptions about the likelihood of future events. While our disclosure controls and procedures and our internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives, there can be no assurance that any design will succeed in achieving its stated goals under all future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with the policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

### Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining an adequate internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) for our company. Our management, including our principal executive officer and principal financial officer, conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework set forth in the "Internal Control—Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on an evaluation under that framework, our management concluded that our internal control over financial reporting was effective at the reasonable assurance level as of December 31, 2017.

The effectiveness of our internal control over financial reporting as of December 31, 2017 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

### Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended December 31, 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders of Sangamo Therapeutics, Inc.

**Opinion on Internal Control over Financial Reporting**
We have audited Sangamo Therapeutics, Inc.'s internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Sangamo Therapeutics, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the 2017 consolidated financial statements of the Company and our report dated March 1, 2018 expressed an unqualified opinion thereon.

**Basis for Opinion**
The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

**Definition and Limitations of Internal Control Over Financial Reporting**
A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ ERNST & YOUNG LLP

Redwood City, California
March 1, 2018

**ITEM 9B – OTHER INFORMATION**

None

**PART III**

Certain information required by Part III is omitted from this Report on Form 10-K because we intend to file our definitive Proxy Statement for our next Annual Meeting of Stockholders, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the 2018 Proxy Statement), no later than April 30, 2018, and certain information to be included in the 2018 Proxy Statement is incorporated herein by reference.

**ITEM 10 – DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

The information required by this item concerning our directors, executive officers, Section 16 compliance and corporate governance matters is incorporated by reference in our 2018 Proxy Statement.

**ITEM 11 – EXECUTIVE COMPENSATION**

The information required by this item regarding executive compensation is incorporated by reference in our 2018 Proxy Statement.

**ITEM 12 – SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information required by this item regarding security ownership of certain beneficial owners and management is incorporated by reference in our 2018 Proxy Statement.

**ITEM 13 – CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information required by this item regarding certain relationships and related transactions is incorporated by reference in our 2018 Proxy Statement.

**ITEM 14 – PRINCIPAL ACCOUNTING FEES AND SERVICES**

The information required by this item regarding principal accounting fees and services is incorporated by reference in our 2018 Proxy Statement.

**PART IV**

**ITEM 15 – EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

(a) The following documents are included as part of this Annual Report on Form 10-K:

1. Financial Statements—See Index to Consolidated Financial Statements in Item 8.
2. Financial Statement Schedules—Not Applicable.
3. Exhibits

| Exhibit Number | Description of Document |
|---|---|
| 3.1 | Seventh Amended and Restated Certificate of Incorporation, as amended (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q filed August 9, 2017). |
| 3.2 | Second Amended and Restated Bylaws, as amended (incorporated by reference to Exhibit 3.2 to the Company's Quarterly Report on Form 10-Q filed August 9, 2017). |
| 4.1 | Form of Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed January 6, 2017). |
| 10.1(+) | Amended and Restated 2013 Stock Incentive Plan (the "2013 Plan") (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed November 14, 2017). |
| 10.2(+) | Form of Restricted Stock Unit Award Agreement under the 2013 Plan. |

| Exhibit Number | Description of Document |
|---|---|
| 10.3(+) | Form of Notice of Grant of Stock Option under the 2013 Plan (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed June 14, 2013). |
| 10.4(+) | Form of Stock Option Agreement under the 2013 Plan (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed June 14, 2013). |
| 10.5(+) | Form of Notice of Grant of Stock Option – Director Initial Grant under the 2013 Plan (incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed June 14, 2013). |
| 10.6(+) | Form of Notice of Grant of Stock Option – Director Annual Grant under the 2013 Plan (incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed June 14, 2013). |
| 10.7(+) | Form of Automatic Stock Option Agreement under the 2013 Plan (incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed June 14, 2013). |
| 10.8(+) | 2010 Employee Stock Purchase Plan (incorporated by reference to Appendix B to the Company's Definitive Proxy Statement on Schedule 14A filed April 21, 2010). |
| 10.9(+) | Executive Severance Plan (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed May 10, 2017). |
| 10.10(+) | Form of Indemnification Agreement (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed August 6, 2015). |
| 10.11(+) | Employment Agreement between the Company and Alexander (Sandy) Macrae, dated May 17, 2016 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed August 4, 2016). |
| 10.12(+) | Employment Agreement between the Company and Kathy Yi, dated February 28, 2017 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed May 10, 2017). |
| 10.13(+) | Offer Letter between the Company and Curt A. Herberts, dated August 16, 2010. |
| 10.14(+) | Employment Agreement between the Company and Edward Conner, dated November 1, 2016 (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed May 10, 2017). |
| 10.15(+) | Amended and Restated Employment Agreement between the Company and H. Ward Wolff, dated December 31, 2008 (incorporated by reference to Exhibit 10.26 to the Company's Annual Report on Form 10-K filed March 3, 2009). |
| 10.16(+) | Separation Agreement between the Company and Dale Ando, dated February 21, 2017. |
| 10.17 | Triple Net Laboratory Lease between the Company and Point Richmond R&D Associates II, LLC, dated May 23, 1997 (incorporated by reference to Exhibit 10.5 to the Company's Registration Statement on Form S-1 (Reg. No. 333-30314), as amended, filed February 24, 2000). |
| 10.18 | First Amendment to Triple Net Laboratory Lease between the Company and Point Richmond R&D Associates II, LLC, dated March 12, 2004 (incorporated by reference to Exhibit 10.20 to the Company's Annual Report on Form 10-K filed February 23, 2005). |
| 10.19 | Second Amendment to Triple Net Laboratory Lease between the Company and Point Richmond R&D Associates II, LLC, dated March 15, 2007 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed November 4, 2013). |
| 10.20 | Third Amendment to Triple Net Laboratory Lease between the Company and Point Richmond R&D Associates II, LLC, dated August 1, 2013 (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed November 4). |
| 10.21 | Lease Agreement between the Company and Marina Boulevard Property, LLC dated November 3, 2017. |
| 10.22 | Amended and Restated Sales Agreement between the Company and Cowen LLC, dated May 26, 2017 (incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed May 26, 2017). |
| 10.23 | Patent License Agreement between the Company and Massachusetts Institute of Technology, dated May 9, 1996, as amended by the First Amendment, dated December 10, 1997 (incorporated by reference to Exhibit 10.4 to the Company's Annual Report on Form 10-K/A filed April 22, 2010). |
| 10.24† | Second Amendment to Patent License Agreement between the Company and Massachusetts Institute of Technology, dated December 2, 1998 (incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K filed March 5, 2010). |

| Exhibit Number | Description of Document |
|---|---|
| 10.25† | Third Amendment to Patent License Agreement between the Company and Massachusetts Institute of Technology, dated September 1, 1999 (incorporated by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K filed March 5, 2010). |
| 10.26 | Fourth Amendment to Patent License Agreement between the Company and Massachusetts Institute of Technology, dated February 10, 2000 (incorporated by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K filed March 5, 2010). |
| 10.27† | Fifth Amendment to Patent License Agreement between the Company and Massachusetts Institute of Technology, effective as of December 15, 2000 (incorporated by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K filed March 5, 2010). |
| 10.28† | Sixth Amendment to Patent License Agreement between the Company and Massachusetts Institute of Technology, dated September 1, 2005 (incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K filed March 5, 2010). |
| 10.29† | Seventh Amendment to Patent License Agreement between the Company and Massachusetts Institute of Technology, dated October 27, 2006 (incorporated by reference to Exhibit 10.20 to the Company's Annual Report on Form 10-K filed March 5, 2010). |
| 10.30 | Eighth Amendment to Patent License Agreement between the Company and Massachusetts Institute of Technology, dated February 1, 2007 (incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K filed March 5, 2010). |
| 10.31 | Ninth Amendment to Patent License Agreement between the Company and Massachusetts Institute of Technology, dated March 14, 2014 (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed May 7, 2014). |
| 10.32 | Sublicense Agreement between the Company and Johnson & Johnson, dated May 9, 1996 (incorporated by reference to Exhibit 10.3 to the Company's Annual Report on Form 10-K/A filed April 22, 2010). |
| 10.33 | License Agreement between the Company and The Scripps Research Institute, dated March 14, 2000 (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K filed March 5, 2010). |
| 10.34† | Amendment to License Agreement between the Company and The Scripps Research Institute, dated April 29, 2008 (incorporated by reference to Exhibit 10.32 to the Company's Annual Report on Form 10-K filed March 5, 2010). |
| 10.35† | Amended and Restated Collaboration and License Agreement between the Company and Shire International GmbH, dated September 1, 2015 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed October 30, 2015). |
| 10.36† | Global Research, Development and Commercialization Collaboration and License Agreement between the Company and Biogen MA Inc. (Bioverativ Inc.), dated January 8, 2014 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed May 7, 2014). |
| 10.37† | Letter Amendment to Global Research, Development and Commercialization Collaboration and License Agreement between the Company and Biogen MA Inc. (Bioverativ Inc.), dated December 14, 2015 (incorporated by reference to Exhibit 10.63 to the Company's Annual Report on Form 10-K filed February 18, 2016). |
| 10.38† | Letter Agreement and Waiver between the Company and Biogen MA Inc. (Bioverativ Inc.), dated March 24, 2016 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed May 5, 2016). |
| 10.39† | Collaboration and License Agreement between the Company and Pfizer Inc., dated May 10, 2017 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed August 9, 2017). |
| 10.40† | Research Collaboration and License Agreement between the Company and Pfizer Inc., dated December 28, 2017. |
| 21.1 | Subsidiaries of the Company |
| 23.1 | Consent of Independent Registered Public Accounting Firm. |
| 24.1 | Power of Attorney (included on signature page). |
| 31.1 | Rule 13a-14(a) Certification of Principal Executive Officer. |
| 31.2 | Rule 13a-14(a) Certification of Principal Financial Officer. |
| 32.1* | Certification Pursuant to 18 U.S.C. Section 1350. |

| Exhibit Number | Description of Document |
|---|---|
| 101.INS | XBRL Instance Document |
| 101.SCH | XBRL Taxonomy Extension Schema Document |
| 101.CAL | XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.DEF | XBRL Taxonomy Extension Definition Linkbase Document |
| 101.LAB | XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE | XBRL Taxonomy Extension Presentation Linkbase Document |

† *Confidential treatment has been granted for certain information contained in this document pursuant to an order of the Securities and Exchange Commission. Such information has been omitted and filed separately with the Securities and Exchange Commission.*

(+) Indicates management contract or compensatory plan or arrangement.

* *The certifications attached as Exhibit 32.1 accompany this Annual Report on Form 10-K pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed "filed" by the Company for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.*

**ITEM 16 – FORM 10-K SUMMARY**

None.

**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on March 1, 2018.

Date: March 1, 2018

SANGAMO THERAPEUTICS, INC.

By: /s/ Alexander Macrae
**Alexander Macrae**
***President, and Chief Executive Officer***

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Alexander Macrae, Kathy Y. Yi, and Heather Turner, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their, his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

| Signature | Title | Date |
|---|---|---|
| /s/ Alexander Macrae<br>**Alexander Macrae** | President, Chief Executive Officer (Principal Executive Officer) and Director | March 1, 2018 |
| /s/ Kathy Y. Yi<br>**Kathy Y. Yi** | Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer) | March 1, 2018 |
| /s/ H. Stewart Parker<br>**H. Stewart Parker** | Director and Chairman of the Board | March 1, 2018 |
| /s/ Robert F. Carey<br>**Robert F Carey** | Director | March 1, 2018 |
| /s/ Stephen G. Dilly, M.B.B.S, Ph.D<br>**Stephen G. Dilly, M.B.B.S, Ph.D** | Director | March 1, 2018 |
| /s/ Roger Jeffs, Ph.D<br>**Roger Jeffs, Ph.D** | Director | March 1, 2018 |
| /s/ Steven J. Mento, Ph.D<br>**Steven J. Mento, Ph.D** | Director | March 1, 2018 |
| /s/ Saira Ramasastry<br>**Saira Ramasastry** | Director | March 1, 2018 |
| /s/ Joseph S. Zakrzewski<br>**Joseph S. Zakrzewski** | Director | March 1, 2018 |

**SANGAMO THERAPEUTICS, INC.**

**RESTRICTED STOCK UNIT ISSUANCE AGREEMENT**

**RECITALS**

A. The Board has adopted the Plan for the purpose of retaining the services of selected Employees, non-employee members of the Board (or the board of directors of any Parent or Subsidiary) and consultants and other independent advisors who provide services to the Corporation (or any Parent or Subsidiary).

B. Participant is to render valuable services to the Corporation (or a Subsidiary), and this Agreement is executed pursuant to, and is intended to carry out the purposes of, the Plan in connection with the Corporation's issuance of shares of Common Stock to the Participant under the Stock Issuance Program.

C. All capitalized terms in this Agreement shall have the meaning assigned to them in the attached Appendix A.

**NOW, THEREFORE**, it is hereby agreed as follows:

1. **Grant of Restricted Stock Units**. The Corporation hereby awards to the Participant, as of the Award Date, Restricted Stock Units under the Plan. Each Restricted Stock Unit represents the right to receive one share of Common Stock on the specified issuance date following the vesting of that unit. The number of shares of Common Stock subject to the awarded Restricted Stock Units, the applicable vesting schedule for those shares, the date on which those vested shares shall become issuable to Participant and the remaining terms and conditions governing the award (the "Award") shall be as set forth in this Agreement.

**AWARD SUMMARY**

| | |
|---|---|
| Award Date: | |
| Number of Shares Subject to Award: | [ ] shares of Common Stock (the "Shares") |
| Vesting Schedule: | Provided the Participant continues in Service through each date, 50% of the Shares shall vest on the six-month anniversary of the Award Date and 50% of the Shares shall vest on the one-year anniversary of the Award Date. However, one or more Shares may be subject to accelerated vesting in accordance with the provisions of Paragraph 5 of this Agreement. |

Issuance Schedule: Subject to Paragraph 7 of this Agreement, each Share in which the Participant vests in accordance with the Vesting Schedule above shall be issued, subject to the Corporation's collection of all applicable Withholding Taxes, on the date that particular Share vests or as soon after that scheduled vesting date as administratively practicable (the "Issue Date"), but in no event later than the later of (i) the close of the calendar year in which such vesting date occurs or (ii) the fifteenth day of the third calendar month following such vesting date. The issuance of the Shares shall be subject to the Corporation's collection of all applicable Withholding Taxes. The procedures pursuant to which the applicable Withholding Taxes are to be collected are set forth in Paragraph 7 of this Agreement.

2. **Limited Transferability**. Prior to the actual issuance of the Shares which vest hereunder, the Participant may not transfer any interest in the Award or the underlying Shares; ***provided, however,*** any Shares which vest hereunder but which otherwise remain unissued at the time of the Participant's death may be transferred pursuant to the provisions of the Participant's will or the laws of inheritance or to the Participant's designated beneficiary or beneficiaries of this Award. The Participant may also direct the Corporation to issue stock certificates for any Shares which in fact vest and become issuable hereunder to one or more designated Family Members or a trust established for the Participant and/or his or her Family Members. The Participant may make a beneficiary designation or certificate directive for this Award at any time by filing the appropriate form with the Plan Administrator or its designee.

3. **Cessation of Service**. Except as otherwise provided in Paragraph 5 below, should the Participant cease Service for any reason prior to vesting in one or more Shares subject to this Award, then the Award will be immediately cancelled with respect to those unvested Shares, and the number of Restricted Stock Units will be reduced accordingly. The Participant shall thereupon cease to have any right or entitlement to receive any Shares under those cancelled units.

4. **Stockholder Rights**. The holder of this Award shall not have any stockholder rights, including voting or dividend rights, with respect to the Shares subject to the Award until the Participant becomes the record holder of those Shares following their actual issuance upon the Corporation's collection of the applicable Withholding Taxes.

5. **Change in Control**.

(a) Any Restricted Stock Units subject to this Award at the time of a Change in Control may be assumed by the successor entity or otherwise continued in full force and effect. In the event of such assumption or continuation of the Award, no accelerated vesting of the Restricted Stock Units shall occur at the time of the Change in Control.

(b) In the event the Award is assumed or otherwise continued in effect, the Restricted Stock Units subject to the Award shall be adjusted immediately after the consummation of the Change in Control so as to apply to the number and class of securities into which the Shares subject to those units immediately prior to the Change in Control would have been converted in consummation of that Change in Control had those Shares actually been issued and outstanding at that time.

(c) If the Restricted Stock Units subject to this Award at the time of the Change in Control are not assumed or otherwise continued in effect in accordance with Paragraph 5(a), then those units will vest immediately upon the closing of the Change in Control. The Shares subject to those vested units will be issued immediately at that time or as soon as administratively practicable thereafter, but in no event more than fifteen (15) business days after such closing, or will otherwise be converted into the right to receive the same consideration per share of Common Stock payable to the other shareholders of the Corporation in consummation of the Change in Control and distributed at the same time as such stockholder payments, but the distribution to the Participant shall in no event be made later than the *later* of (i) the close of the calendar year in which the Change in Control is effected or (ii) the fifteenth (15th) day of the third (3rd) calendar month following the effective date of such Change in Control.

(d) This Agreement shall not in any way affect the right of the Corporation to adjust, reclassify, reorganize or otherwise change its capital or business structure or to merge, consolidate, dissolve, liquidate or sell or transfer all or any part of its business or assets.

6. **Adjustment in Shares**. Should any change be made to the outstanding Common Stock by reason of any stock split, stock dividend, recapitalization, combination of shares, exchange of shares, spin-off transaction or other change affecting the outstanding Common Stock as a class without the Corporation's receipt of consideration, or should the value of the outstanding shares of Common Stock be substantially reduced as a result of a spin-off transaction or an extraordinary dividend or distribution or should there occur any merger, consolidation or other reorganization (including, without limitation, a Change in Control transaction) then equitable adjustments shall be made to the total number and/or class of securities issuable pursuant to this Award in such manner as the Plan Administrator deems appropriate in order to reflect such change and thereby prevent the dilution or enlargement of benefits hereunder.

7. **Issue Date and Collection of Withholding Taxes**.

(a) Except as otherwise provided in Paragraph 5, if:

(i) this Award is otherwise subject to Withholding Taxes on the Issue Date specified in the Issuance Schedule above in Paragraph 1 (the "Original Issue Date"),

(ii) the Original Issue Date does not occur (x) during an "open window period" applicable to the Participant, as determined by the Corporation in accordance with the Corporation's trading policies governing the sale of Common Stock, or (x) on a date when the Participant is otherwise permitted to sell shares of Common Stock on an established stock exchange or stock market (including, but not limited to, under a previously established 10b5-1 trading plan entered into in compliance with the Corporation's policies), and

(iii) the Corporation elects, prior to the Original Issue Date, (x) not to satisfy such Withholding Taxes through the Share Withholding Method (as defined in subparagraph (c) of this Paragraph 7) and (y) not to permit the Participant to pay such Withholding Taxes in cash (or by check),

then the Shares that would otherwise be issued to the Participant on the Original Issue Date will not be issued to the Participant on the Original Issue Date and will instead be issued to the Participant on the first business day when the Participant is not prohibited from selling shares of Common Stock on an established stock exchange or stock market, but in no event later than the later of (i) the close of the calendar year in which the vesting date with respect to such Shares occurs or (ii) the fifteenth day of the third calendar month following such vesting date.

(b) Upon the applicable Issue Date, the Corporation shall issue to or on behalf of the Participant a certificate (which may be in electronic form) for the applicable number of underlying shares of Common Stock, subject, however, to the Corporation's collection of the applicable Withholding Taxes.

(c) The Withholding Taxes required to be withheld with respect to the issuance of the vested Shares hereunder shall be collected from the Participant through any of the following alternatives, in the sole discretion of the Corporation:

(i) the Participant's delivery of his or her separate check payable to the Corporation in the amount of such taxes;

(ii) the use of the proceeds from a next-day sale of the Shares issued to the Participant, provided and only if (i) such a sale is permissible under the Corporation's trading policies governing the sale of Common Stock, (ii) the Participant makes an irrevocable commitment, on or before the Issue Date for those Shares, to effect such sale of the Shares and (iii) the transaction is not otherwise deemed to constitute a prohibited loan under Section 402 of the Sarbanes-Oxley Act of 2002; or

(iii) through a share withholding procedure pursuant to which the Corporation will withhold, at the time of such issuance, a portion of the Shares with a Fair Market Value (measured as of the issuance date) equal to the amount of those taxes (the "Share Withholding Method"); ***provided, however***, that the amount of any Shares so withheld shall not exceed the amount necessary to satisfy the Corporation's required tax withholding obligations using the minimum statutory withholding rates for federal, state, local and foreign tax purposes that are applicable to supplemental taxable income.

(d) Notwithstanding anything to the contrary in this Paragraph 7, the employee portion of the federal, state, local and foreign employment taxes required to be withheld by the Corporation in connection with the vesting of the Shares (the "Employment Taxes") shall in all events be collected from the Participant no later than the last business day of the calendar year in which the Shares vest hereunder. Accordingly, to the extent the Issue Date for one or more vested Shares is to occur in a year subsequent to the calendar year in which those Shares vest, the Participant shall, on or before the last business day of the calendar year in which the Shares vest, deliver to the Corporation a check payable to its order in the dollar amount equal to the Employment Taxes required to be withheld with respect to those Shares.

(e) Except as otherwise provided in Paragraph 5, the settlement of all Restricted Stock Units which vest under the Award shall be made solely in shares of Common Stock. In no event, however, shall any fractional shares be issued. Accordingly, the total number

of shares of Common Stock to be issued pursuant to the Award shall, to the extent necessary, be rounded down to the next whole share in order to avoid the issuance of a fractional share.

8. **Compliance with Laws and Regulations**. The issuance of shares of Common Stock pursuant to the Award shall be subject to compliance by the Corporation and the Participant with all applicable requirements of law relating thereto and with all applicable regulations of any stock exchange on which the Common Stock may be listed for trading at the time of such issuance.

9. **Notices**. Any notice required to be given or delivered to the Corporation under the terms of this Agreement shall be in writing and addressed to the Corporation at its principal corporate offices. Except to the extent electronic notice is expressly authorized hereunder, any notice required to be given or delivered to the Participant shall be in writing and addressed to the Participant at the address indicated below the Participant's signature line on this Agreement. All notices shall be deemed effective upon personal delivery (or electronic delivery to the extent authorized hereunder) or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

10. **Successors and Assigns**. Except to the extent otherwise provided in this Agreement, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the Corporation and its successors and assigns and the Participant, the Participant's assigns, the legal representatives, heirs and legatees of the Participant's estate and any beneficiaries of the Award designated by the Participant.

11. **Construction**. This Agreement and the Award evidenced hereby are made and granted pursuant to the Plan and are in all respects limited by and subject to the terms of the Plan. All decisions of the Committee with respect to any question or issue arising under the Plan or this Agreement shall be conclusive and binding on all persons having an interest in the Award.

12. **Governing Law**. The interpretation, performance and enforcement of this Agreement shall be governed by the laws of the State of California without resort to that State's conflict-of-laws rules.

13. **Employment at Will**. Nothing in this Agreement or in the Plan shall confer upon the Participant any right to continue in Service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Corporation (or any Parent or Subsidiary employing or retaining the Participant) or of the Participant, which rights are hereby expressly reserved by each, to terminate the Participant's Service at any time for any reason, with or without cause.

**IN WITNESS WHEREOF**, the parties have executed this Agreement on the day and year first indicated above.

**SANGAMO THERAPEUTICS, INC.**

By: _____
Alexander D. Macrae, M.B., Ch.B., Ph.D.
President, Chief Executive Officer

**PARTICIPANT**

Signature: _____

Address: _____

_____

**APPENDIX A**

**DEFINITIONS**

The following definitions shall be in effect under the Agreement:

A. **Agreement** shall mean this Restricted Stock Unit Issuance Agreement.

B. **Award** shall mean the award of Restricted Stock Units made to the Participant pursuant to the terms of this Agreement.

C. **Award Date** shall mean the date the Restricted Stock Units are awarded to Participant pursuant to the Agreement and shall be the date indicated in Paragraph 1 of the Agreement.

D. **Board** shall mean the Corporation's Board of Directors.

E. **Change in Control** shall mean a change in ownership or control of the Corporation effected through any of the following transactions:

(i) a merger, consolidation or other reorganization approved by the Corporation's stockholders, unless securities representing more than fifty percent (50%) of the total combined voting power of the voting securities of the successor corporation are immediately thereafter beneficially owned, directly or indirectly and in substantially the same proportion, by the persons who beneficially owned the Corporation's outstanding voting securities immediately prior to such transaction, or

(ii) a stockholder-approved sale, transfer or other disposition of all or substantially all of the Corporation's assets, or

(iii) the closing of any transaction or series of related transactions pursuant to which any person or any group of persons comprising a "group" within the meaning of Rule 13d-5(b)(1) of the 1934 Act (other than the Corporation or a person that, prior to such transaction or series of related transactions, directly or indirectly controls, is controlled by or is under common control with, the Corporation) becomes directly or indirectly the beneficial owner (within the meaning of Rule 13d-3 of the 1934 Act) of securities possessing (or convertible into or exercisable for securities possessing) more than fifty percent (50%) of the total combined voting power of the Corporation's securities (as measured in terms of the power to vote with respect to the election of Board members) outstanding immediately after the consummation of such transaction or series of related transactions, whether such transaction involves a direct issuance from the Corporation or the acquisition of outstanding securities held by one or more of the Corporation's existing stockholders.

F. **Code** shall mean the Internal Revenue Code of 1986, as amended.

G. **Corporation** shall mean Sangamo Therapeutics, Inc., a Delaware corporation, and any successor corporate successor to all or substantially all of the assets or voting stock of Sangamo Therapeutics, Inc. which shall by appropriate action adopt the Plan.

H. **Employee** shall mean an individual who is in the employ of the Corporation (or any Parent or Subsidiary), subject to the control and direction of the employer entity as to both the work to be performed and the manner and method of performance.

I. **Fair Market Value** per share of Common Stock on any relevant date shall be determined in accordance with the following provisions:

(i) If the Common Stock is at the time traded on the Nasdaq Global or Global Select Market, then the Fair Market Value shall be the closing selling price per share of Common Stock on the date in question, as such price is reported by the National Association of Securities Dealers for that particular Stock Exchange and published in The Wall Street Journal. If there is no closing selling price for the Common Stock on the date in question, then the Fair Market Value shall be the closing selling price on the last preceding date for which such quotation exists.

(ii) If the Common Stock is at the time listed on any other Stock Exchange, then the Fair Market Value shall be the closing selling price per share of Common Stock on the date in question on the Stock Exchange determined by the Plan Administrator to be the primary market for the Common Stock, as such price is officially quoted in the composite tape of transactions on such exchange and published in The Wall Street Journal. If there is no closing selling price for the Common Stock on the date in question, then the Fair Market Value shall be the closing selling price on the last preceding date for which such quotation exists.

J. **Family Member** shall mean any of the following members of the Participant's family; any child, stepchild, grandchild, grandparent, parent, stepparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law or sister-in-law.

K. **1934 Act** shall mean the Securities Exchange Act of 1934, as amended from time to time.

L. **Parent** shall mean any corporation (other than the Corporation) in an unbroken chain of corporations ending with the Corporation, provided each corporation in the unbroken chain (other than the Corporation) owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one or more of the other corporations in such chain.

M. **Participant** shall mean the person to whom the Award is made pursuant to the Agreement.

N. **Plan** shall mean the Corporation's 2013 Stock Incentive Plan.

O. **Plan Administrator** shall mean either the Board or a committee of the Board acting in its capacity as administrator of the Plan.

P. **Service** shall mean the Participant's performance of services for the Corporation (or any Parent or Subsidiary) in the capacity of an Employee, a non-employee member of the board of directors or a consultant or independent advisor. Service shall not be deemed to cease during a period of military leave, sick leave or other personal leave approved by the Corporation; provided, however, that except to the extent otherwise required by law or expressly authorized by the Plan Administrator or by the Corporation's written policy on leaves of absence, no Service credit shall be given for vesting purposes for any period the Participant is on a leave of absence.

Q. **Stock Exchange** shall mean the American Stock Exchange, the Nasdaq Global or Global Select Market or the New York Stock Exchange.

R. **Subsidiary** shall mean any corporation (other than the Corporation) in an unbroken chain of corporations beginning with the Corporation, provided each corporation (other than the last corporation) in the unbroken chain owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.

S. **Withholding Taxes** shall mean the federal, state, local and foreign income and employment taxes required to be withheld by the Corporation in connection with the vesting and issuance of the shares of Common Stock under the Award.

**EXHIBIT 10.13**

**Sangamo BioSciences, Inc.**
Point Richmond Tech Center
501 Canal Blvd., Suite A100
Richmond, CA 94804
510-970-6000 510-236-8951 (Fax)

August 16, 2010

Curt Herberts

Dear Curt:

It is my pleasure to offer you the following position at Sangamo BioSciences, Inc:

| | |
|---|---|
| Title: | Director, Corporate Development |
| Reporting to: | David Ichikawa, Senior Vice President, Business Development |
| Salary: | $190,000 base pay per annum, (paid semi-monthly) and eligible for annual bonus commencing with the 2011 plan year |
| Starting Date: | On October 11, 2010 |
| Stock Options: | 35,000 shares, subject to the approval of the Board of Directors and rules of vesting schedule described in the Sangamo BioSciences, Inc. Stock Option Plan |
| Signing Bonus: | 10,000 (to be repaid in full should you resign your position within 12 months) |
| Benefits: | A group medical plan is in place with Aetna. Your specific choice of options within the plan determines the employee contribution toward premiums. Other benefits include dental insurance, short-term and long term disability insurance, life insurance, a Section 125 flexible spending plan, a 401(k) retirement savings plan, employee stock purchase plan, 15 vacation days, 10 paid holidays and 10 sick days per year. |

I know you are fully aware of the extraordinary effort required to build a first rate organization. I am confident that you will succeed in the tasks at hand. Please sign and date both copies of this employment offer letter to indicate your acceptance, and return one copy to us for our files.

Sincerely,

/s/ Edward Lanphier

Edward Lanphier
President and Chief Executive Officer

cc:personnel file
payroll

Accepted: /s/ Curt A. Herberts 08/19/10
Curt HerbertsDate

2.

Sangamo THERAPEUTICS
501 Canal Blvd., Suite A
Richmond, CA 94804
510.970.6000 | sangamo.com

February 17, 2017

Dale Ando

Dear Dale:

This letter sets forth the terms of the agreement between you and Sangamo Therapeutics, Inc. (the "Company"), in connection with the separation of your employment with the Company. This letter agreement provides for all payments to which you may be entitled from the Company and its affiliates, including under the Employment Agreement between you and the Company dated August 2, 2004 and the offer letter agreement between you and the Company dated July 6, 2004 (collectively the "Employment Documents").

1. **Termination**. February 3, 2017 was your last day of employment with the Company (the "Termination Date"). Whether or not you sign this letter agreement, on the last day of your employment you will receive payment for all compensation and accrued vacation owed to you through the Termination Date.

2. **Equity Awards; Benefits**.

(a) The vested portion of your options will be exercisable for three (3) months following the Termination Date (i.e., until May 3, 2017), in accordance with the applicable terms set forth in your award agreements. Any such vested portion of your options that is not exercised on or before that date, and any portion of your options that is not exercisable as of the Termination Date, shall be forfeited. In addition, the unvested portion of your restricted stock units as of the Termination Date will be forfeited without any payment. Attached is a schedule of your options and restricted stock units and the vested and unvested portion of each such award as of the Termination Date.

(b) Your group medical insurance benefits will end on February 28, 2017. Regardless of signing this letter agreement, you may elect to continue receiving group medical insurance pursuant to the federal "COBRA" law, 29 U.S.C. § 1161 et seq. All premium costs shall be paid by you on a monthly basis for as long as, and to the extent that, you remain eligible for COBRA continuation coverage. You should consult the COBRA materials to be provided by the Company for details regarding COBRA continuation benefits. All other benefits will end on the Termination Date.

3. **Severance**. While the Company is not obligated to provide you with any severance, in order to assist you in making this transition, it is willing to provide you with

severance benefits described in Attachment A if you sign this letter agreement and return it to Aubrey Rhodes within twenty-one days from the date of this letter, and provided you do not thereafter revoke it. The severance benefits will be paid as set forth in Attachment A. If you do not accept this letter agreement within that time, it will become null and void. By signing and returning this letter agreement, you will be entering into a binding agreement with the Company and will be agreeing to the terms and conditions set forth in the paragraphs below, including the release of claims set forth in paragraphs 4 and 5.

4. **Release**. You hereby fully, forever, irrevocably and unconditionally release and discharge the Company, its officers, directors, stockholders, corporate affiliates, subsidiaries, parent companies, agents and employees (each in their individual and corporate capacities) (hereinafter the "Released Parties") from any and all claims, charges, complaints, demands, causes of action, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that you ever had or now have against the Released Parties, including, but not limited to, any arising out of your employment with and/or separation from the Company, including, but not limited to, all employment discrimination claims under Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e et seq., the Americans With Disabilities Act of 1990, 42 U.S.C. § 12101 et seq., the Family and Medical Leave Act, 29 U.S.C. § 2601 et seq., the Rehabilitation Act of 1973, 29 U.S.C. § 701 et seq., the Age Discrimination in Employment Act, the Older Workers Benefit Protection Act, the California Fair Employment and Housing Act, Cal. Gov't Code § 12900 et seq., the California Family Rights Act, Cal. Gov't Code § 12945.2 and § 19702.3, the California Equal Pay Law, Cal. Labor Code § 1197.5 et seq., the California Unruh Civil Rights Act, Cal. Civil Code § 51 et seq. and the California Family and Medical Leave Law, Cal. Labor Code §§ 233, 7291.16 and 7291.2, all as amended, and all claims arising out of the Fair Credit Reporting Act, 15 U.S.C. § 1681 et seq. and the Employee Retirement Income Security Act of 1974 ("ERISA"), 29 U.S.C. § 1001 et seq., all as amended, and all common law claims including, but not limited to, actions in tort, defamation and breach of contract, all claims to any non-vested ownership interest in the Company, contractual or otherwise, including, but not limited to, claims to stock or stock options, and any claim or damage arising out of your employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above. The only exceptions to this release are any claim(s) you may have for:

(a) unemployment benefits pursuant to the terms of applicable law (to the extent available to you under applicable law);

(b) workers' compensation insurance benefits pursuant to Division 4 of the California Labor Code or a comparable and applicable state law, under the terms of any worker's compensation insurance policy or fund of the Company;

(c) continued participation in certain of the Company's group health benefit plans pursuant to the terms and conditions of the federal law known as "COBRA," if applicable, and/or any applicable state law counterpart to COBRA;

(d) any benefit entitlements vested as of your Termination Date, pursuant to written terms of any applicable employee benefit plan sponsored by the Company; and

(e) any claims that, as a matter of applicable law, are not waivable.

5. **Waiver of Unknown Claims**. You understand and agree that the claims released in paragraph 4 above include not only claims presently known to you, but also include all unknown or unanticipated claims, rights, demands, actions, obligations, liabilities, and causes of action of every kind and character that would otherwise come within the scope of the released claims as described in paragraph 4. You understand that you may hereafter discover facts different from what you now believe to be true, which if known, could have materially affected this letter agreement, but you nevertheless waive any claims or rights based on different or additional facts. You knowingly and voluntarily waive any and all rights or benefits that you may now have, or in the future may have, under the terms of Section 1542 of the Civil Code of the State of California, which provides as follows:

> A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH A CREDITOR DOES NOT KNOW OF OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE WHICH IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR.

6. **Confidential Information**. You acknowledge and reaffirm your obligation to keep confidential all non-public information concerning the Company that you acquired during the course of your employment with the Company and pursuant to fulfilling your cooperating obligations as set forth in Section 8 below, as stated more fully in the Company's Proprietary Information, Invention and Materials Agreement that you entered into as of August 2, 2004 (the "Proprietary Information, Invention and Materials Agreement"), which remains in full force and effect. You affirm your obligation to keep all Company Information confidential and not to disclose it to any third party in the future. You understand that the term "Company Information" includes, but is not limited to, the following:

(a) Confidential information, including information received from third parties under confidential conditions; and

(b) Other technical, scientific, marketing, business, product development or financial information, the use or disclosure of which might reasonably be determined to be contrary to the interests of the Company.

The Proprietary Information, Invention and Materials Agreement is incorporated herein by this reference, and you agree to continue to be bound by the terms of that Agreement.

7. **Return of Company Property**. You confirm that you have returned to the Company in good working order all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, wireless handheld devices, cellular phones and pagers), access or credit cards, and any other property in your possession or control belonging to the Company and have left intact all electronic Company documents, including, but not limited to, those that you developed or helped to develop during your employment. You further confirm that you have cancelled all accounts for your benefit, if

any, in the Company's name, including, but not limited to, credit cards, telephone charge cards, cellular phone and/or pager accounts and computer accounts.

8. **Transition Services**.

(a) You agree, at the Company's request, during the period from the Termination Date through August 3, 2017 (the "Transition Services Period"), to provide reasonable assistance to the Company to transition to Edward Conner, M.D., and other employees of the Company your responsibilities and projects, including with respect to the completion of certain manuscripts pertaining to the HIV program, and to resolve any technical issues associated with projects on which you worked during the period of your employment with the Company, the scope, timing and frequency of which shall mutually agreeable to you and Mr. Connor.

(b) You agree, at the Company's request, to cooperate, by providing truthful information, documents and testimony, in any Company investigation, litigation, arbitration or regulatory proceeding regarding events that occurred during your employment with the Company. Your requested cooperation may include, for example, making yourself available to consult with the Company's counsel, providing truthful information and documents and to appear to give truthful testimony. The Company will reimburse you for reasonable out-of-pocket expenses that you incur in providing any requested cooperation so long as you provide advance written notice to the Company of your request for reimbursement and in all cases you provide satisfactory documentation of the expenses.

(c) You understand and agree that the payments described in Annex A include compensation to you for any and all assistance and cooperation the Company may require pursuant to Sections 8(a) and (b) above and that you shall not be entitled to additional compensation during the Transition Services Period for assistance provided by you, if any.

(d) You agree and acknowledge that (i) you will perform the services during the Transition Services Period as an independent contractor to the Company, (ii) nothing in this letter agreement shall in any way be construed to constitute you as an agent, employee or representative of the Company or its affiliates, (iii) you are not authorized to bind the Company or its affiliates to any liability or obligation or to represent that you have any such authority and, (iv) you are not expected to incur, and are not entitled to reimbursement, for any expenses.

9. **Business Expenses and Compensation**. You acknowledge that you have been reimbursed by the Company for all business expenses incurred in conjunction with the performance of your employment and that no other reimbursements are owed to you. You further acknowledge that you have received payment in full for all services rendered in conjunction with your employment by the Company and that no other compensation, including wages, draws, payment for accrued but unused vacation time or severance payments or benefits pursuant to any plan, policy or practice, is owed to you, with the exception of the severance benefits described in paragraph 3 above.

10. **No Further Employment with the Company**. You understand and agree that by signing this letter agreement, you are giving up any right you may have to reemployment with the Company. You further agree that you will not seek, accept, or otherwise pursue employment with the Company, and if you do seek such employment, the Company may decline to employ you at any time, and you will have no legal recourse if the Company so declines.

11. **Non-Disparagement**. You understand and agree that you shall not make any false, disparaging or derogatory statements to any media outlet, industry group, financial institution or current or former employee, consultant, client, customer of the Company or other person or entity regarding the Company or any of its directors, officers, employees, agents or representatives or about the Company's business affairs and financial condition.

12. **Reports to Government Entities**. Nothing in this letter agreement, including the Confidential Information and Proprietary Information, Invention and Materials Agreement paragraphs, restricts or prohibits you from initiating communications directly with, responding to any inquiries from, providing testimony before, providing confidential information to, reporting possible violations of law or regulation to, or from filing a claim or assisting with an investigation directly with a self-regulatory authority or a government agency or entity, including the U.S. Equal Employment Opportunity Commission, the Department of Labor, the National Labor Relations Board, the Department of Justice, the Securities and Exchange Commission, the Congress, and any agency Inspector General (collectively, the "Regulators"), or from making other disclosures that are protected under the whistleblower provisions of state or federal law or regulation. However, to the maximum extent permitted by law, you are waiving your right to receive any individual monetary relief from the Company or any others covered by the Release resulting from such claims or conduct, regardless of whether you or another party has filed them, and in the event you obtain such monetary relief the Company will be entitled to an offset for the payments made pursuant to this letter agreement. This letter agreement does not limit your right to receive an award from any Regulator that provides awards for providing information relating to a potential violation of law. You do not need the prior authorization of the Company to engage in conduct protected by this paragraph, and you do not need to notify the Company that you have engaged in such conduct. Please take notice that federal law provides criminal and civil immunity to federal and state claims for trade secret misappropriation to individuals who disclose a trade secret to their attorney, a court, or a government official in certain, confidential circumstances that are set forth at 18 U.S.C. §§ 1833(b)(1) and 1833(b)(2), related to the reporting or investigation of a suspected violation of the law, or in connection with a lawsuit for retaliation for reporting a suspected violation of the law.

13. **Acknowledgement of Voluntariness and Time to Review and Revoke**. You acknowledge that:

(a) you read this letter agreement and you understand it;

(b) you are signing this letter agreement voluntarily in order to release your claims against the Company in exchange for payment that is greater than you would otherwise have received;

(c) you are signing this letter agreement after the date of your separation from the Company and you were offered at least 21 days to consider your choice to sign this Agreement;

(d) the Company advises you to consult with an attorney;

(e) you agree that changes to this letter agreement before its execution, whether material or immaterial, do not restart your time to review the letter agreement;

(f) You are not waiving any rights or claims under the Age Discrimination in Employment Act of 1967 (29 U.S.C. § 621 et seq.) that may arise after the date this Agreement is executed; and

(g) you know that you can revoke this letter agreement within 7 days of signing it and that the letter agreement does not become effective until that 7-day period has passed (the "Effective Date"). To revoke this letter agreement, contact Leslie Mesones.

14. **Amendment**. This letter agreement shall be binding upon the parties and may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the parties hereto. This letter agreement is binding upon and shall inure to the benefit of the parties and their respective agents, assigns, heirs, executors, successors, and administrators.

15. **Severability**. If any provision in this letter agreement is for any reason held to be unenforceable, it shall not affect the enforceability of the remaining provisions and the remaining provisions shall be enforced to the extent permitted by law.

16. **Confidentiality**. You understand and agree that as a condition for payment to you of the severance benefits herein described, the terms and contents of this letter agreement, and the contents of the negotiations and discussions resulting in this letter agreement, shall be maintained as confidential by you, your spouse, your attorney or your accountant, and shall not be disclosed except to the extent required by law or as otherwise agreed to in writing by the Company.

17. **Nature of Agreement**. You understand and agree that this letter agreement is a severance agreement and does not constitute an admission of liability or wrongdoing on the part of the Company.

18. **Voluntary Assent**. You affirm that no other promises or agreements of any kind have been made to or with you by any person or entity whatsoever to cause you to sign this letter agreement, and that you fully understand the meaning and intent of this letter agreement. You further state and represent that you have carefully read this letter agreement, including Attachment A, understand the contents herein, freely and voluntarily assent to all of the terms and conditions hereof, and sign your name of your own free act.

19. **Applicable Law**. This letter agreement shall be interpreted and construed by the laws of the State of California, without regard to conflict of laws provisions.

20. **Attorneys Fees**. In the event of any dispute concerning this letter agreement, the prevailing party will be entitled to recover its attorneys' fees and costs, in addition to any other relief to which such party may be entitled.

21. **Entire Agreement**. Except as provided in paragraph 6 (Proprietary Information, Invention and Materials Agreement), this letter agreement contains and constitutes the entire understanding and agreement between the parties hereto with respect to your severance benefits and the settlement of claims against the Company and cancels all previous oral and written negotiations, agreements and commitments in connection therewith, including under the Employment Documents.

22. **Application of Section 409A of the Internal Revenue Code**. This letter agreement is intended to comply with section 409A of the Code and the regulations issued thereunder ("Section 409A"), including the six-month delay for certain key employees if applicable, or an exemption. Severance benefits under this letter agreement are intended to be exempt from Section 409A under the "short-term deferral" exception, to the maximum extent applicable, and then under the "separation pay" exception, to the maximum extent applicable. All payments to be made upon a termination of employment under this letter agreement may only be made upon a "separation from service" under Section 409A. For purposes of Section 409A, the right to a series of installment payments under this letter agreement shall be treated as a right to a series of separate payments and each payment shall be treated as a separate payment. With respect to payments that are subject to Section 409A, in no event may you, directly or indirectly, designate the calendar year of a payment, and if a payment that is subject to execution of this letter agreement could be made in more than one taxable year, based on timing of the execution of this letter agreement, payment will be made in the later taxable year. Any reimbursements and in-kind benefits provided under this letter agreement will be made or provided in accordance with the requirements of Section 409A. You will be solely responsible for any tax imposed under Section 409A and in no event will the Company have any liability with respect to any tax, interest or other penalty imposed under Section 409A.

23. **Arbitration**. The parties agree that any and all disputes arising out of the terms of this letter agreement and their interpretation, and any of the matters released, shall be subject to final and binding arbitration before the American Arbitration Association under its Employment Arbitration Rules and Mediation Procedures in Contra Costa County, California. THE PARTIES HEREBY AGREE TO WAIVE THEIR RIGHT TO HAVE ANY DISPUTE BETWEEN THEM RESOLVED IN A COURT OF LAW BY A JUDGE OR JURY. This paragraph will not prevent either party from seeking preliminary injunctive relief (or any other provisional remedy) under applicable law from any court having jurisdiction over the parties and the subject matter of their dispute relating to their obligations under this letter agreement or under the Proprietary Information, Invention and Materials Agreement before arbitration or while arbitration is pending.

If you have any questions about the matters covered in this letter agreement, please call Leslie Mesones.

Very truly yours,

By: /s/ Leslie Mesones

I hereby agree to the terms and conditions set forth above and I have chosen to execute this on the date below.

/s/ Dale G. Ando Date February 21, 2017
Dale G. Ando, M.D.

**ATTACHMENT A**

**DESCRIPTION OF SEVERANCE BENEFITS**

In exchange for your signing and not revoking this letter agreement, including, but not limited to, your waiver and release of claims described in paragraphs 4 and 5 and your performance of the transition services as described in paragraph 8, the Company hereby agrees to provide you with the following severance benefits:

a. **Severance Pay**. The Company will continue to pay your base salary as in effect on the Termination Date, less applicable federal, state and local tax deductions, for a period of twenty six (26) weeks following the Termination Date, in accordance with the Company's normal payroll practices. The first payment will be made on the first payroll date that is administratively practicable after the Effective Date (and within 30 days after the Termination Date) (such date hereinafter referred to as the "Initial Payment Date") and will include unpaid installments for the period from the Termination Date to the first payment date. In addition, on the Initial Payment Date, the Company will pay you an amount of $121,695, less applicable federal, state and local tax deductions.

b. **COBRA Continuation**. During the period beginning on the Termination Date and ending on the earlier of (i) the date on which you first become covered by any other "group health plan" as described in Section 4980B(g)(2) of the Internal Revenue Code of 1986, as amended (the "Code") or (ii) the last day of the seven (7) month period following the Termination Date (the "Coverage Period"), if you are eligible and elect to receive continued health coverage under the Company's health plan under the Consolidated Omnibus Budget Reconciliation Act ("COBRA") at a level of coverage at or below you level of coverage in effect on the Termination Date, and you pay the full monthly COBRA premium cost for such health coverage, the Company shall reimburse you monthly an amount equal to the monthly COBRA premium paid by you, less the premium charge that is paid by the Company's active employees for such coverage as in effect on the Termination Date (the "COBRA Reimbursement"). The payments shall commence on the first payroll date that is administratively practicable after the Effective Date (and within 30 days after the Termination Date). The first payment shall include any payments for the period from the Termination Date to the commencement date. The Company shall reimburse you under this subsection only for the portion of the Coverage Period during which you continue coverage under the Company's health plan. You agree to promptly notify the Company of your coverage under an alternative health plan upon becoming covered by such alternative plan. The COBRA health care continuation coverage period under section 4980B of the Code shall run concurrently with the Coverage Period. Notwithstanding the foregoing, the Company reserves the right to restructure the foregoing COBRA premium reimbursement arrangement in any manner necessary or appropriate to avoid fines, penalties or negative tax consequences to the Company or you (including, without limitation, to avoid any penalty imposed for violation of the nondiscrimination requirements under the Patient Protection and Affordable Care Act or the guidance issued thereunder), as determined by the Company

in its sole and absolute discretion, including treating such reimbursements as taxable benefits subject to withholding.

# LEASE AGREEMENT

**BETWEEN**

**MARINA BOULEVARD PROPERTY, LLC,**

**AS LANDLORD,**

**AND**

**SANGAMO THERAPEUTICS, INC.,**

**AS TENANT**

**DATED**

**November 3, 2017**

**Table of Contents**

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**List of Exhibits**

All exhibits and attachments attached hereto are incorporated herein by this reference. The following exhibits are attached to and made a part of this Lease:

**BASIC LEASE INFORMATION**

This Basic Lease Information is attached to and incorporated by reference to this Lease (as hereinafter defined) between Landlord and Tenant, as defined below.

| | |
|---|---|
| Landlord: | MARINA BOULEVARD PROPERTY, LLC,<br>a Delaware limited liability company |
| Tenant: | SANGAMO THERAPEUTICS, INC.,<br>a Delaware corporation |
| Guarantor: | None. |
| Premises: | An area comprising the entire rentable square feet of the building commonly known as 7000 Marina Boulevard, Brisbane, California 94005 (the "**Building**"), which contains approximately 87,695 rentable square feet in the aggregate, as depicted on Exhibit A-1. |
| Land: | The land on which the Building is located as described in Exhibit B. |
| Project: | The Building, the Land and the driveways, parking facilities, and similar improvements and easements associated with the Building, Land and the operation thereof. |
| Complex: | The Project and other buildings which comprise Marina Landing, a multi-building complex, subject to the conditions, covenants and restrictions as administered by owners' associations applicable to the Project, as further set forth and described in Exhibit A-2. |
| Term: | One hundred thirty-two (132) months, commencing on the first day of the month following the Commencement Date (unless the Commencement Date is on the first day of the month, in which case the Term shall commence on the Commencement Date) and ending at 5:00 p.m. local time on the last day of the 132nd full calendar month following the Commencement Date (the "**Expiration Date**"), subject to extension and earlier termination as provided in the Lease. |
| Commencement Date: | June 1, 2018. |
| Delivery Date: | The date that this Lease has been mutually executed and delivered by both parties and the Letter of Credit has been delivered to Landlord. |

Base Rent:

| Lease Month | Annual Base Rent | Monthly Base Rent | Monthly Rental Rate Per RSF |
|---|---|---|---|
| 1 – 12* | $2,999,169.00 | $249,930.75 | $2.85 |
| 13 – 24* | $3,089,144.07 | $257,428.67 | $2.94 |
| 25 – 36 | $3,181,818.39 | $265,151.53 | $3.02 |
| 37 – 48 | $3,277,272.94 | $273,106.08 | $3.11 |
| 49 – 60 | $3,375,591.13 | $281,299.26 | $3.21 |
| 61 – 72 | $3,476,858.87 | $289,738.24 | $3.30 |
| 73 – 84 | $3,581,164.63 | $298,430.39 | $3.40 |
| 85 – 96 | $3,688,599.57 | $307,383.30 | $3.51 |
| 97 – 108 | $3,799,257.56 | $316,604.80 | $3.61 |
| 109 – 120 | $3,913,235.28 | $326,102.94 | $3.72 |
| 121 – 132 | $4,030,632.34 | $335,886.03 | $3.83 |

| | |
|---|---|
| | * Monthly Base Rent shall be abated by (i) 100% for the second (2nd) full calendar month through and including the tenth (10th) Lease Month, and (ii) by 50% for the eleventh (11th) Lease Month through and including the sixteenth (16th) Lease Month, pursuant to Section 4(b) of the Lease.<br><br>As used herein, the term "**Lease Month**" shall mean each calendar month during the Term (and if the Commencement Date does not occur on the first (1st) day of a calendar month, the period from the Commencement Date to the first (1st) day of the next calendar month shall be included in the first (1st) Lease Month for purposes of determining the duration of the Term and the monthly Base Rent rate applicable for such partial month). |
| Security Deposit / Letter of Credit: | $3,500,000.00 |
| Additional Rent: | Tenant shall pay 100% of the costs of Common Area Maintenance Costs, Taxes and Insurance for the Building, and Tenant's Proportionate Share of Common Area Maintenance Costs, Taxes, and Insurance for the Complex. |
| Utilities: | Tenant shall obtain all water, electricity, sewerage, gas, telephone and other utilities for the Premises directly from the public utility company furnishing same. Any meters required in connection therewith shall be installed at Tenant's sole cost except as set forth in Section 7(b) of this Lease. |
| Tenant's Proportionate Share: | For the Building – 100% of the Building.<br><br>For the Complex – 55% of the Complex. |
| Permitted Use: | For general office, research and development, lab and production uses, and all other legally permitted uses associated with Tenant's business, to the extent permitted by applicable laws and zoning regulations, but for no other purpose whatsoever. |
| Tenant Improvements: | Except as otherwise set forth in this Lease, Tenant accepts the Premises in its current "**AS-IS**" condition, provided that Tenant shall have the right to construct the Tenant Improvements in accordance with the Work Letter attached hereto as Exhibit D. |
| Parking: | Tenant may use on a non-exclusive basis up to two hundred seventy-eight (278) undesignated automobile parking spaces in the parking area adjacent to the Building (twenty-six (26) of which are located in a secured underground parking garage), at no cost to Tenant during the initial Term. |
| Renewal Options: | Tenant may renew this Lease for two (2) additional periods of five (5) years each, by delivering written notice of the exercise thereof to Landlord not earlier than fifteen (15) months nor later than nine (9) months before the expiration of the then-current Term, as further set forth in Exhibit H. |
| ROFO to Purchase: | Provided that Tenant is leasing and physically occupying 87,695 rentable square feet in the Building (including any Permitted Transfers) and has not assigned or subleased any space within the Premises (except for Permitted Transfers), subject to compliance with the California Subdivision Map Act to create a separate legal parcel for the Building, Tenant shall have a one-time right of first offer to purchase the Building exercisable during the first three (3) years following the Commencement Date, subject to the terms and conditions set forth in Exhibit M. |
| Broker/Agent: | For Tenant: Newmark Cornish & Carey<br><br>For Landlord: CBRE, Inc. |

| | |
|---|---|
| Tenant's Address for Notices prior to Commencement Date: | Sangamo Therapeutics, Inc.<br>501 Canal Boulevard, Suite A100<br>Richmond, CA 94804<br>Attention: Director of Legal<br>Telephone: (510) 970-6000 |
| Tenant's Address for Notices after Commencement Date: | Sangamo Therapeutics, Inc.<br>7000 Marina Boulevard<br>Brisbane, CA 94005<br>Attention: Director of Legal<br>Telephone: TBD<br>Facsimile: TBD |
| Landlord's Address for Notices: | Marina Boulevard Property, LLC<br>c/o Westport Capital Partners LLC<br>2121 Rosecrans Avenue<br>Suite 4325<br>El Segundo, California 90245<br>Attention: Eric Clapp, Managing Director<br>Telephone: (310) 294-1239<br>Facsimile: (310) 643-7379 |
| | With a copy to:<br>Marina Boulevard Property, LLC<br>c/o Westport Capital Partners<br>40 Danbury Road<br>Wilton, Connecticut 06897<br>Attention: Marc Porosoff, Esq.<br>Telephone: (203) 429-8602<br>Facsimile: (203) 429-8599 |
| | Additional copy to:<br>DLA Piper US LLP<br>550 South Hope Street, Suite 2300<br>Los Angeles, California 90071<br>Attention: Jackie Park, Esq.<br>Telephone: (213) 330-7743<br>Facsimile: (213) 330-7543 |
| Rent Payment Address: | Marina Boulevard Property, LLC<br>PO Box 101760<br>Pasadena, California 91189-1760 |

**LEASE AGREEMENT**

This Lease Agreement (this "**Lease**") is entered into as of November 3, 2017 (the "**Effective Date**"), between MARINA BOULEVARD PROPERTY, LLC, a Delaware limited liability company ("**Landlord**"), and SANGAMO THERAPEUTICS, INC., a Delaware corporation ("**Tenant**").

1. **Definitions and Basic Provisions**. The definitions and basic provisions set forth in the Basic Lease Information (the "**Basic Lease Information**") executed by Landlord and Tenant contemporaneously herewith are incorporated herein by reference for all purposes. If any conflict exists between any Basic Lease Information and the Lease, then the Lease shall control. Additionally, the following terms shall have the following meanings when used in this Lease: "**Affiliate**" means any person or entity which, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with the party in question (as used herein, the term "control" shall mean the possession, direct or indirect, of not less than a majority of the voting rights attributable to the shares of Tenant and a majority of the outstanding capital stock of Tenant, or the power to direct or cause the direction of the management and policies of a Tenant, whether through the ownership of voting shares, by contract or otherwise); "**Building's Structure**" means the Building's exterior walls, roof (structure and membrane), elevator shafts (if any), footings, foundations, structural portions of load-bearing walls, structural floors and subfloors, and structural columns and beams; "**Building's Systems**" means the Premises' and Building's HVAC, life-safety, security, plumbing, electrical, mechanical systems, elevator and parking garage rolling gate/access control; "**Business Day(s)**" means Monday through Friday of each week, exclusive of Holidays; "**Holidays**" means New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and any other nationally or regionally recognized holiday; "**including**" means including, without limitation; "**Laws**" means all federal, state, and local laws, ordinances, rules and regulations, all court orders, governmental directives, and governmental orders and all interpretations of the foregoing, and all restrictive covenants affecting the Project, and "**Law**" shall mean any of the foregoing; "**Rent**" shall collectively refer to Base Rent, Additional Rent, Taxes, and Insurance (each as defined in Exhibit C hereto), and all other sums that Tenant may owe to Landlord or otherwise be required to pay under the Lease; "**Tenant's Off-Premises Equipment**" means any of Tenant's equipment or other property that may be located on or about the Project (other than inside the Premises); and "**Tenant Party**" means any of the following persons: Tenant; any assignees claiming by, through, or under Tenant; any subtenants claiming by, through, or under Tenant; and any of their respective agents, contractors and employees.

2. **Lease Grant**. Subject to the terms of this Lease, Landlord leases to Tenant, and Tenant leases from Landlord, the Premises (as defined in the Basic Lease Information). The Premises are outlined on the plan attached to the Lease as Exhibit A-1.

3. **Tender of Possession; Square Footage of Premises**.

(a) **Tender of Possession**. The Premises will be delivered to Tenant in its "AS-IS" condition on the Delivery Date. Upon Landlord's delivery of the Premises (the "**Delivery Date**"), Tenant shall have exclusive access to construct the Tenant Improvements (as defined on Exhibit D) in accordance with the terms of the Work Letter attached hereto as Exhibit D. Landlord may send Tenant notice of the occurrence of the Commencement Date in the form of the attached Exhibit F, which notice Tenant shall acknowledge by executing a copy of the notice and returning it to Landlord. If Tenant fails to sign and return the notice to Landlord within ten (10) days of receipt thereof from Landlord, the notice as sent by Landlord shall be deemed to have correctly set forth the Commencement Date. Failure of Landlord to send such notice shall have no effect on the Commencement Date. Any use of the Premises by Tenant prior to the Commencement Date shall be subject to all of the provisions of this Lease excepting only those requiring the payment of Rent. Subject to terms of this Lease, Tenant shall have access to the Building, twenty-four (24) hours per day, seven (7) days per week, every day of the year during the Term.

(b) **Square Footage of Premises**. For purposes of this Lease, the "rentable square feet" of the Premises and the Complex has been calculated by Landlord pursuant to the Building Owners and Managers Association International Standard Method for Measuring Floor Area in Office Buildings, ANSI Z65.1 - 2010 (the "**BOMA Standard**"). The rentable square footage of the Premises set forth in this Lease shall be deemed by Tenant to be the rentable square footage of the Premises for all purposes. In that regard, Tenant has been given an opportunity to measure the rentable square footage of the Premises prior to execution of this Lease and Tenant hereby waives any rights it may have following execution of this Lease to measure the Premises or claim that the rentable square footage of the Premises is other than as set forth in this Lease.

4. **Rent; Abatement of Rent**.

(a) **Rent**. Commencing on the Commencement Date, subject to Section 4(b) below, Tenant shall timely pay to Landlord as Rent, (i) Base Rent as set forth in the Basic Lease Information (subject to Section 4(b) below), and (ii) Additional Rent (as defined in Exhibit C) as set forth in Exhibit C hereto, without notice, demand, deduction or set-off (except as otherwise expressly provided herein), by good and sufficient check drawn on a national banking association at Landlord's address provided for in this Lease or electronically via automatic debit or wire transfer to such account as Landlord designates in writing to Tenant, or as otherwise specified in writing by Landlord. The obligations of Tenant to pay Base Rent and other sums to Landlord and the obligations of Landlord under this Lease are independent obligations. Base Rent shall be payable monthly in advance. The first (1st) monthly installment of Base Rent shall be payable contemporaneously with the execution of this Lease; thereafter, Base Rent shall be payable on the first (1st) day of each month beginning on the first (1st) day of the second (2nd) full calendar month of the Term, subject to Section 4(b) below. The monthly Base Rent for any partial month at the beginning of the Term shall equal the product of 1/365 of the annual Base Rent in effect during the partial month and the number of days in the partial month, and shall be due on the Commencement Date. Payments of Base Rent for any fractional calendar month at the end of the Term shall be similarly prorated. Tenant shall pay Additional Rent at the same time and in the same manner as Base Rent.

(b) **Abatement of Rent**. Notwithstanding anything to the contrary contained in this Lease, and provided that no Event of Default exists, Landlord hereby agrees to abate Tenant's obligation to pay Tenant's monthly Base Rent (the "**Abated Rent**") by (i) 100% for the second (2nd) full calendar month through and including the tenth (10th) Lease Month, and (ii) by 50% for the eleventh (11th) Lease Month through and including the sixteenth (16th) Lease Month (the "**Abatement Period**"). During the Abatement Period, Tenant shall remain responsible for the payment of all of its other monetary obligations under this Lease. If during the Abatement Period an Event of Default (as defined in Section 17 below) occurs, and Landlord does not elect to terminate this Lease in accordance with Article 18 below, then the Abated Rent shall reinstate for the remaining Abatement Period as of the date Tenant cures such Event of Default. If at any time during the Term, an Event of Default by Tenant occurs, and Landlord does elect to terminate this Lease in accordance with Article 18 below, then as a part of the recovery set forth in Article 18, Landlord shall be entitled to the recovery of that portion of the unamortized Abated Rent (which Abated Rent shall be amortized on a straight-line basis over the initial Lease Term).

5. **Delinquent Payment; Handling Charges**. All past due payments required of Tenant hereunder shall bear interest from the date that is three (3) Business Days after Landlord's written notice thereof until paid at the lesser of ten percent (10%) per annum or the maximum lawful rate of interest (such lesser amount is referred to herein as the "**Default Rate**"); additionally, Landlord, in addition to all other rights and remedies available to it, may charge Tenant a fee equal to five percent (5%) of the delinquent payment (the "**Late Charge**") to reimburse Landlord for its cost and inconvenience incurred as a consequence of Tenant's delinquency. In no event, however, shall the charges permitted under this Section 5 or elsewhere in this Lease, to the extent they are considered to be interest under applicable Law,

exceed the maximum lawful rate of interest. Notwithstanding the foregoing, Landlord shall waive the accrual of the Default Rate and the payment the Late Charge once in any given twelve (12) month period.

6. **Letter of Credit**. Tenant shall deliver to Landlord, upon Tenant's execution of this Lease, a Letter of Credit (as hereinafter defined) in the amount specified in the Basic Lease Information, as additional security for the faithful performance and observance by Tenant of the terms, covenants and conditions of this Lease. The Letter of Credit shall be in the form of a clean, irrevocable, non-documentary and unconditional letter of credit (the "**Letter of Credit**") which is attached hereto as Exhibit L, issued by and drawable upon Wells Fargo Bank, N.A. (the "**Issuing Bank**"). If upon any transfer of the Letter of Credit, any fees or charges shall be so imposed, then such fees or charges shall be payable solely by Tenant and the Letter of Credit shall so specify. The Letter of Credit shall provide that it shall be deemed automatically renewed, without amendment, for consecutive periods of one year each thereafter during the Term (and in no event shall the Letter of Credit expire prior to the forty-fifth (45th) day following the Expiration Date) unless the Issuing Bank sends duplicate notices (the "**Non-Renewal Notices**") to Landlord by certified mail, return receipt requested (one of which shall be addressed "Attention, Chief Legal Officer" and the other of which shall be addressed "Attention, Chief Financial Officer"), not less than forty-five (45) days next preceding the then expiration date of the Letter of Credit stating that the Issuing Bank has elected not to renew the Letter of Credit. The Issuing Bank shall agree with all drawers, endorsers and bona fide holders that drafts drawn under and in compliance with the terms of the Letter of Credit will be duly honored upon presentation to the Issuing Bank at an office location in Los Angeles, California. The Letter of Credit shall be subject in all respects to the International Standby Practices 1998, International Chamber of Commerce Publication No. 590.

(a) Application of Security. If (a) an Event of Default by Tenant occurs in the payment or performance of any of the terms, covenants or conditions of this Lease, including the payment of Rent, or (b) Tenant fails to make any installment of Rent as and when due beyond an applicable notice and cure period, or (c) Landlord receives a Non-Renewal Notice, Landlord shall have the right by sight draft to draw, at its election, all or a portion of the proceeds of the Letter of Credit and thereafter hold, use, apply, or retain the whole or any part of such proceeds, as the case may be, (x) to the extent required for the payment of any Rent or any other sum as to which Tenant is in default including (i) any sum which Landlord may expend or may be required to expend by reason of Tenant's Event of Default, and/or (ii) any damages to which Landlord is entitled pursuant to this Lease, whether such damages accrue before or after summary proceedings or other reentry by Landlord, and/or (y) as a cash security deposit, unless and until, in the case of clause (c) above, Tenant delivers to Landlord a substitute Letter of Credit which meets the requirements of this Section 6. If Landlord applies or retains any part of the proceeds of the Letter of Credit, or cash security, Tenant, within five (5) Business Days upon written demand, shall deposit with Landlord the amount so applied or retained so that Landlord shall have the full amount thereof on hand at all times during the Term. If Tenant shall comply with all of the terms, covenants and conditions of this Lease, the Letter of Credit or cash security, as the case may be, shall be returned to Tenant within thirty (30) days after the Expiration Date and after delivery of possession of the Premises to Landlord in the manner required by this Lease.

(b) Transfer. Upon a sale or other transfer of the Building, or any financing of Landlord's interest therein, Landlord shall have the right to transfer the Letter of Credit or the cash security to its transferee or lender. With respect to the Letter of Credit, within ten (10) Business Days after notice of such transfer or financing, Tenant, at its sole cost, shall arrange for the transfer of the Letter of Credit to the new landlord or the lender, as designated in writing by Landlord in the foregoing notice or have the Letter of Credit reissued in the name of the new landlord or the lender. Upon such transfer, Tenant shall look solely to the new landlord or lender for the return of the Letter of Credit or such cash security; provided that such new landlord has assumed Landlord's obligations hereunder and the provisions hereof shall apply to every transfer or assignment made of the Letter of Credit or such cash security to a new landlord. Tenant shall not assign or encumber or attempt to assign or encumber the Letter of Credit or such cash security and

neither Landlord nor its successors or assigns shall be bound by any such action or attempted assignment, or encumbrance.

(c) **Reduction of Letter of Credit**. Effective as of the date the Reduction Conditions (as hereinafter defined) are satisfied, the amount of the Letter of Credit shall be reduced to an amount equal to One Million Five Hundred Thousand Dollars ($1,500,000.00). For purposes of this Section 6(c), the "**Reduction Conditions**" shall mean (i) Tenant shall have received a Certificate of Occupancy for the Premises and provided Landlord with a copy thereof, and (ii) Tenant shall have raised Two Hundred Million Dollars ($200,000,000.00) as evidenced by a Security Exchange Commission regulatory filing reflecting an increase in equity of Tenant by Two Hundred Million Dollars ($200,000,000.00) as compared with Tenant's audited financial statements for the calendar year ending 2016. There shall be no reduction of the Letter of Credit as set forth herein if, at the time of such reduction, an Event of Default exists under this Lease.

7. **Services; Utilities; Common Areas**.

(a) **Services**. Other than Landlord's maintenance obligations expressly set forth in this Lease, Landlord shall not be obligated to provide any services to Tenant, provided that Landlord shall as part of Common Area Maintenance Costs provide electric lighting for all Common Area (including parking area) as Landlord reasonably determines to be standard, including replacement of Building standard lights, bulbs and tubes.

(b) **Utility Use**. Tenant shall obtain all water, electricity, sewage, gas, telephone and other utilities for the Premises directly from the public utility company furnishing same. Any meters or modifications thereof required in connection therewith shall be installed at Tenant's sole cost. Tenant shall pay all utility deposits and fees, and all monthly service charges for water, electricity, sewage, gas, telephone and any other utility services furnished to the Premises during the Term of this Lease. Tenant shall not install any equipment which exceeds or overloads the capacity of the utility facilities serving the Premises. Tenant agrees that Landlord shall not be liable for damages, by abatement of Rent or otherwise, for failure to furnish or delay in furnishing any service, or for any diminution in the quality or quantity thereof, when such failure or delay or diminution is occasioned, in whole or in part, by breakage, repairs, replacements, or improvements, by act or default of Tenant or other parties, by any Force Majeure Event (as defined in Section 26(c)), or by any other cause beyond Landlord's reasonable control. Notwithstanding the foregoing, in the event of an interruption of utility service which (i) is the result of Landlord's gross negligence or willful misconduct, (ii) continues for more than three (3) consecutive Business Days ("**Eligibility Period**"), and (iii) renders the Premises unsuitable for Tenant's normal business operations, and (iv) Tenant actually does not use the Premises or any portion thereof for three (3) consecutive Business Days, then Tenant's Base Rent shall be abated or reduced, as the case may be, after expiration of the Eligibility Period for such time that Tenant continues to be so prevented from using, and does not use, the Premises or a portion thereof, in the proportion that the rentable area of the portion of the Premises that Tenant is prevented from using, and does not use, bears to the rentable area of the Premises.

Tenant hereby reserves the right, in connection with either its Tenant Improvement electrical tie-in work (pursuant to the terms and conditions of the Tenant Work Letter) or due to applicable governmental code or agency required electrical systems testing, to reasonably shut down power to the Building for a limited time not to exceed four (4) hours per each shut-down, except as otherwise provided in the MOP (as defined). Tenant shall prepare a method of procedure ("**MOP**") setting forth the specific terms and conditions of such action, including the specific time of Building power shut-down and re-start, for Landlord's review and approval (which approval shall not be unreasonably withheld) no later than ten (10) business days prior to the anticipated date of shut-down. As long as Tenant complies with the terms and conditions of the MOP as approved by Landlord, Tenant shall not be liable for damages to the Cell Tower Equipment in connection with Tenant's shut-down as set forth herein.

(c) **Common Areas**. The term "**Common Area**" is defined for all purposes of this Lease as that part of the Project and/or Complex intended for the common use of all tenants, including among other facilities (as such may be applicable to the Complex), parking areas, private streets and alleys, landscaping, curbs, loading areas, sidewalks, lighting facilities, drinking fountains, meeting rooms, public toilets, and the like, but excluding: (i) space in other buildings (now or hereafter existing) in the Complex designated for rental for commercial purposes, as the same may exist from time to time; (ii) streets and alleys maintained by a public authority; (iii) areas within the Complex which may from time to time not be owned by Landlord (unless subject to a cross-access or common use agreement benefiting the area which includes the Premises); and (iv) areas leased to a single-purpose user where access is restricted. Landlord reserves the right to change from time to time the dimensions and location of the Common Area, as well as the dimensions, identities, locations and types of any buildings, signs or other improvements in the Complex, so long as (y) access to the Premises and/or the parking area, or (z) the size or access to the Premises and/or the parking area is not materially adversely affected thereby. For example, and without limiting the generality of the immediately preceding sentence, Landlord shall have no right to move the parking area from the Complex. Tenant, and its employees and customers, and when duly authorized pursuant to the provisions of this Lease, its subtenants, licensees and concessionaires, shall have the non-exclusive right to use the parking spaces (designated in the Basic Lease Information) in the Common Area (excluding roof(s)) as constituted from time to time) and right to designate visitor parking spaces within the parking area of the Complex (and the number of visitor parking spaces shall be deducted from the overall two hundred seventy-eight (278) undesignated parking spaces provided to Tenant), such use to be in common with Landlord, other tenants in the Building (if any) and/or Complex, as applicable, and other persons permitted by the Landlord to use the same, and subject to rights of governmental authorities, easements, other restrictions of record, and such reasonable rules and regulations governing use as Landlord may from time to time prescribe subject to Section 13 hereof. For example, and without limiting the generality of Landlord's ability to establish rules and regulations governing all aspects of the Common Area in accordance with Section 13 hereof, Tenant agrees as follows:

(i) Landlord may from time to time designate specific areas within the Project or Complex, as applicable, in which automobiles owned by Tenant, its employees, subtenants, licensees, and concessionaires shall be parked; and Tenant agrees that if any automobile or other vehicle owned by Tenant or any of its employees, its subtenants, its licensees or its concessionaires, or their employees, shall at any time be parked in any part of the Project or Complex, as applicable, other than the specified areas designated for employee parking, Landlord may have such vehicle towed at the cost of the owner of same.

(ii) Tenant shall not solicit business within the Common Area nor take any action which would interfere with the rights of other persons to use the Common Area.

(iii) Landlord may temporarily close any part of the Common Area for such periods of time as may be reasonably necessary to make repairs or alterations or to prevent the public from obtaining prescriptive rights, so long as access to the Premises and/or the parking area is not materially adversely affected thereby.

8. **Alterations; Repairs; Maintenance; Signs**.

(a) **Alterations**. Except for Tenant Improvements and Cosmetic Changes (as hereinafter defined), Tenant shall not make any alterations, additions or improvements to the Premises (collectively, the "**Alterations**") without the prior written consent of Landlord, which consent shall not be unreasonably withheld, conditioned or delayed, except for the installation of unattached, movable trade fixtures which may be installed without drilling, cutting or otherwise defacing the Premises. Notwithstanding the foregoing, Tenant shall not be obligated to receive the written consent of Landlord for interior Alterations to the Premises (i) where the estimated cost of the proposed Alteration is Seventy-Five Thousand Dollars ($75,000.00) or less in any twelve (12) month period, (ii) if said Alterations do not affect the structural components of the Building, or adversely affect the Building's Systems or which can be seen

from outside the Premises, and (iii) if said Alteration shall not require a building permit or any federal, state, county or local approvals (the "**Cosmetic Changes**"). Tenant shall furnish complete plans and specifications to Landlord for its approval, which approval shall not be unreasonably withheld, conditioned or delayed, at the time it requests Landlord's consent to any Alterations, if the desired Alterations: (i) will affect the Building's Systems or Building's Structure; or (ii) will require the filing of plans and specifications with any governmental or quasi-governmental agency or authority; or (iii) will require a building permit or other federal, state, county or local approvals with respect thereto. Landlord shall either approve or disapprove Tenant's proposed Alteration within five (5) business days of Landlord's receipt of Tenant's request and Tenant's plans and specifications with respect to such proposed Alteration. Subsequent to obtaining Landlord's consent and prior to commencement of the Alterations, Tenant shall deliver to Landlord any building permit required by applicable Law and a copy of the executed construction contract(s). Tenant shall reimburse Landlord within ten (10) days after the rendition of a bill for all of Landlord's actual and reasonable out-of-pocket costs incurred in connection with any Alterations (excluding Cosmetic Changes), including all management, engineering, outside consulting, and construction fees incurred by or on behalf of Landlord for the review and approval of Tenant's plans and specifications and for the monitoring of construction of the Alterations, together with a supervision coordination fee to Landlord in an amount equal to the product of (i) three percent (3%) and (ii) the costs of the Alterations. If Landlord consents to the making of any Alteration, such Alteration shall be made by Tenant at Tenant's sole cost and expense by contractors and subcontractors approved in writing by Landlord in accordance with Section 8(b)(iii), which approval shall not unreasonably be withheld, conditioned or delayed. Without Landlord's prior written consent, Tenant shall not use any portion of the Common Areas either within or outside the Project or Complex, as applicable, in connection with the making of any Alterations. If the Alterations which Tenant causes to be constructed result in Landlord being required to make any alterations and/or improvements to other portions of the Project or Complex, as applicable, in order to comply with any applicable Laws (provided that such alterations and/or improvements are necessitated solely due to Tenant's Alterations, and in no event are caused by any violations or non-compliance with applicable Laws which existed on the Delivery Date), then Tenant shall reimburse Landlord within thirty (30) days upon written demand for all costs and expenses actually and reasonably incurred by Landlord in making such alterations and/or improvements in the Project or Complex, as applicable. Any Alterations made by Tenant shall become the property of Landlord upon the expiration or sooner termination of this Lease and shall remain on and be surrendered with the Premises upon the expiration or sooner termination of this Lease, except Tenant shall, upon written demand by Landlord, at Tenant's sole cost and expense, forthwith and with all due diligence (but in any event not later than ten (10) days after the expiration or earlier termination of the Lease) remove all or any portion of any Alterations made by Tenant which are designated by Landlord in writing to be removed (the "**Removal Notice**") at the time of Landlord's consent to such Alterations (including without limitation stairs, bank vaults, and cabling, movable laboratory casework and related appliances, built-in cabinet work and paneling, sinks and related plumbing fixtures, laboratory benches, exterior venting fume hoods and walk-in freezers and refrigerators, if applicable) and repair any damages to the Premises caused by such removal in a good and workmanlike manner to their original condition, reasonable wear and tear and Casualty not required to be repaired by Tenant excepted. All construction work done by Tenant within the Premises shall be performed in a good and workmanlike manner with new materials of first-class quality, lien-free and in compliance with all applicable Laws, and in such manner as to cause a minimum of interference with other construction in progress and with the transaction of business in the Project or Complex, as applicable. **TENANT AGREES TO INDEMNIFY, DEFEND AND HOLD LANDLORD HARMLESS AGAINST ANY LOSS, LIABILITY OR DAMAGE RESULTING FROM SUCH WORK EXCEPT TO THE EXTENT ANY SUCH LOSS, LIABILITY OR DAMAGE IS CAUSED BY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF LANDLORD AND FURTHER SUBJECT TO THE MUTUAL WAIVERS OF SUBROGATION HEREINAFTER SET FORTH IN SECTION 11(d), AND TENANT SHALL, IF REQUESTED BY LANDLORD, FURNISH A BOND OR OTHER SECURITY REASONABLY SATISFACTORY TO LANDLORD AGAINST ANY SUCH LOSS,**

**LIABILITY OR DAMAGE**; provided, however, that no bond shall be required in connection with any Cosmetic Changes. The foregoing indemnity shall survive the expiration or earlier termination of this Lease. Landlord's consent to or approval of any Alterations, additions or improvements (or the plans therefor) shall not constitute a representation or warranty by Landlord, nor Landlord's acceptance, that the same comply with sound architectural and/or engineering practices or with all applicable Laws, and Tenant shall be solely responsible for ensuring all such compliance.

(b) **Repairs; Maintenance**.

(i) **By Landlord**. Landlord shall, subject to reimbursement under Exhibit C (to the extent such costs are reimbursable therein), keep the Building's Structure in good repair and working condition. Notwithstanding anything to the contrary contained in this Lease, any defects in design or construction of the Base, Shell and Core shall be corrected by Landlord at Landlord's sole cost. Landlord, however, shall not be required to make any repairs occasioned by the act or negligence of Tenant, its agents, contractors, employees, subtenants, licensees and concessionaires (including, but not limited to, roof leaks resulting from Tenant's installation of air conditioning equipment or any other new roof penetration or placement); and the provisions of the previous sentence are expressly recognized to be subject to Sections 14 and 15 of this Lease. In the event that the Premises should become in need of repairs required to be made by Landlord hereunder, Tenant shall give immediate written notice thereof to Landlord, and Landlord shall have a reasonable time after receipt by Landlord of such written notice in which to make such repairs. Landlord shall not be liable to Tenant for any interruption of Tenant's business or inconvenience caused due to any work performed in the Premises or in the Complex pursuant to Landlord's rights and obligations under the Lease, provided, however, Landlord shall use commercially reasonable efforts to not disturb the normal conduct of Tenant's business or Tenant's access to the Premises and/or parking areas while performing such repairs and maintenance. In addition, Landlord shall maintain the Common Areas of the Project or Complex, as applicable, in a manner consistent with first class office and biotech buildings in Brisbane, California, subject to reimbursement as set forth in Exhibit C (to the extent such costs are reimbursable therein). **TENANT HEREBY WAIVES AND RELEASES ITS RIGHT TO MAKE REPAIRS AT LANDLORD'S EXPENSE UNDER SECTIONS 1941 AND 1942 OF THE CALIFORNIA CIVIL CODE OR UNDER ANY SIMILAR LAW, STATUTE OR ORDINANCE NOW OR HEREAFTER IN EFFECT**.

(ii) **By Tenant**. Tenant shall keep the Premises (other than those portions required to be maintained by Landlord under Section 8(b)(i) above), in good, clean and habitable condition, and shall at its sole cost and expense keep the same free of dirt, rubbish, ice or snow, insects, rodents, vermin and other pests and make all needed repairs and replacements, including replacement of cracked or broken glass, except for repairs and replacements required to be made by Landlord, and any damage caused by ordinary wear and tear or Casualty. Without limiting the coverage of the previous sentence, it is understood that Tenant's responsibilities therein include the repair and replacement in accordance with all applicable Laws of the Building's Systems, including the lighting, heating, air conditioning, life-safety, plumbing and other electrical, mechanical and electromotive installation, equipment and fixtures and also include all utility repairs in ducts, conduits, pipes and wiring, and any sewer stoppage located in, under and above the Premises. All contractors and subcontractors may be subject to Landlord's written approval in accordance with Section 8(b)(iii). If any repairs required to be made by Tenant hereunder are not commenced within thirty (30) days (such time period not being subject to the notice and cure provisions of Section 17(f)) after written notice delivered to Tenant by Landlord (which shall be given at its reasonable discretion) or are not diligently executed to completion with Tenant using commercially reasonable efforts given the circumstances, Landlord may at its option make such repairs without liability to Tenant for any loss or damage which may result to its stock or business by reason of such repairs, unless caused by the gross negligence or willful misconduct of Landlord, its employees, agents or contractors, provided that Landlord shall use commercially reasonable efforts to minimize interference with Tenant's use of, or access to, the Premises. Tenant shall pay to Landlord within ten (10) days upon written demand as Rent hereunder,

the cost of such repairs plus interest at the Default Rate, such interest to accrue continuously from the date of payment by Landlord until repayment by Tenant. Notwithstanding the foregoing, Landlord shall have the right to make such repairs without notice to Tenant in the event of an emergency, or if such repairs relate to the exterior of the Premises. At the expiration or earlier termination of this Lease, Tenant shall surrender the Premises in as good a condition as existed on the date the Tenant Improvements are substantially completed, excepting reasonable wear and tear and casualties not required to be repaired by Tenant. If Tenant elects to store any personal property of Tenant, including goods, wares, merchandise, inventory, trade fixtures and other personal property of Tenant, same shall be stored at the sole risk of Tenant. Unless caused by the gross negligence or willful misconduct of Landlord, its employees, agents or contractors, Landlord and its agents shall not be liable for any loss or damage to persons or property resulting from fire, explosion, falling plaster, steam, gas, electricity, water or rain which may leak from any part of the Complex or from the pipes, appliances or plumbing works therein or from the roof, street or subsurface or from any other places resulting from dampness or any other cause whatsoever, or from the act or negligence of any other tenant or any officer, agent, employee, contractor or guest of any such tenant. It is generally understood that mold spores are present essentially everywhere and that mold can grow in most any moist location. Emphasis is properly placed on prevention of moisture and on good housekeeping and ventilation practices. Tenant acknowledges the necessity of housekeeping, ventilation, and moisture control (especially in kitchens, janitor's closets, bathrooms, break rooms and around outside walls) for mold prevention. In signing this Lease, Tenant has first inspected the Premises and certifies that it has not observed mold, mildew or moisture within the Premises. Tenant agrees to immediately notify Landlord if it observes mold/mildew and/or moisture conditions (from any source, including leaks), and allow Landlord to evaluate and make recommendations and/or take appropriate corrective action. **TENANT RELIEVES LANDLORD FROM ANY LIABILITY FOR ANY BODILY INJURY OR DAMAGES TO PROPERTY CAUSED BY OR ASSOCIATED WITH MOISTURE OR THE GROWTH OF OR OCCURRENCE OF MOLD OR MILDEW ON THE PREMISES, UNLESS SAME IS IN EXISTENCE ON THE DELIVERY DATE OR IS CAUSED BY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF LANDLORD, ITS EMPLOYEES, AGENTS OR CONTRACTORS**. In addition, execution of this Lease constitutes acknowledgement by Tenant that control of moisture and mold prevention are integral to its Lease obligations.

Notwithstanding Tenant's repair and maintenance obligations pursuant to this Section 8(b)(ii), if any item of Tenant's repair and maintenance obligations set forth herein involves a capital repair, replacement, improvement and/or equipment under generally accepted accounting principles consistently applied ("**Tenant Repair Capital Item**"), Tenant shall provide written notice thereof to Landlord. Landlord shall, pursuant to the receipt of such notice from Tenant, make such Tenant Repair Capital Item in a manner such that the Tenant Repair Capital Item to be completed by Landlord shall be similar in size, scope and specifications as the item so repaired by Landlord. Landlord and Tenant shall use their respective commercially reasonable efforts to discuss and come to a mutually acceptable agreement with respect to the size, scope and specifications of the Tenant Repair Capital Item; provided, however, that in no event shall the size, scope and specifications of such Tenant Repair Capital Item exceed the original size, scope and specifications of the item subject to the repair. Following completion of the Tenant Repair Capital Item, Landlord shall provide Tenant with written notice of (i) the total cost of such Tenant Repair Capital Item ("**Tenant Repair Capital Item Cost**"), (ii) the estimated useful life of such Tenant Repair Capital Item per generally accepted accounting principles consistently applied ("**Useful Life**"), (iii) the amortization of such Tenant Repair Capital Item Cost over such Useful Life at an interest rate equal to the "prime rate" as announced from time to time by Bank of America, N.A., plus one percent (1%) per annum, and (iv) the monthly amount due and payable by Tenant to reimburse Landlord for that portion of the amortized Tenant Repair Capital Item Cost applicable to the remainder of the Lease Term, which monthly amount shall be paid by Tenant to Landlord concurrently with the payment by Tenant to Landlord of the monthly Base Rent.

(iii) **Performance of Work**. All work described in this Section 8 which affects the Building's Structure and/or the Building's Systems shall be performed only by contractors and subcontractors approved in writing by Landlord, which approval shall not be unreasonably withheld, conditioned or delayed (which approval or disapproval shall be provided by Landlord within three (3) business days of Landlord's receipt of the identity of the applicable contractor and subcontractor). Landlord hereby acknowledges and agrees that Tenant's contractors and subcontractors approved by Landlord in connection with the design and construction of the Tenant Improvements shall be deemed to be approved in connection with Tenant's work in this Section 8. Tenant shall cause all contractors and subcontractors to procure and maintain insurance coverage naming Landlord and Landlord's property management company as additional insureds against such risks, in such amounts, on such forms, and with such companies as Landlord may reasonably require as set forth on Exhibit I attached hereto. Tenant shall provide Landlord with the identities, mailing addresses and telephone numbers of all persons performing work or supplying materials prior to beginning such construction and Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable Laws. All such work shall be performed in accordance with all applicable Laws and in a good and workmanlike manner so as not to damage the Building (including the Premises, the Building's Structure and the Building's Systems). All such work which may affect the Building's Structure or the Building's Systems, at Landlord's election, must be performed by Landlord's usual contractor for such work or a contractor approved by Landlord, which approval shall not be unreasonably withheld, conditioned or delayed. All work affecting the roof of the Building must be performed by Landlord's roofing contractor or a contractor approved by Landlord, which approval shall not be unreasonably withheld, conditioned or delayed, and no such work will be permitted if it would void or reduce the warranty on the roof.

(c) **Mechanic's Liens**. All work performed, materials furnished, or obligations incurred by or at the request of a Tenant Party shall be deemed authorized and ordered by Tenant only, and Tenant shall not permit any mechanic's liens to be filed against the Premises or the Project in connection therewith. Upon completion of any such work, Tenant shall deliver to Landlord final lien waivers from all contractors, subcontractors and materialmen who performed such work. If such a lien is filed, then Tenant shall, within thirty (30) days after Landlord has delivered notice of the filing thereof to Tenant (or such earlier time period as may be necessary to prevent the forfeiture of the Premises, Project or any interest of Landlord therein or the imposition of a civil or criminal fine with respect thereto), either: (1) pay the amount of the lien and cause the lien to be released of record; or (2) diligently contest such lien and deliver to Landlord a bond or other security reasonably satisfactory to Landlord. If Tenant fails to timely take either such action, then Landlord may pay the lien claim, and any amounts so paid, including expenses and interest, shall be paid by Tenant to Landlord within thirty (30) days after Landlord has invoiced Tenant therefor. Landlord and Tenant acknowledge and agree that their relationship is and shall be solely that of "landlord-tenant" (thereby excluding a relationship of "owner-contractor," "owner-agent" or other similar relationships). Accordingly, all materialmen, contractors, artisans, mechanics, laborers and any other persons now or hereafter contracting with Tenant, any contractor or subcontractor of Tenant or any other Tenant Party for the furnishing of any labor, services, materials, supplies or equipment with respect to any portion of the Premises, at any time from the date hereof until the end of the Term, are hereby charged with notice that they look exclusively to Tenant to obtain payment for same. Nothing herein shall be deemed a consent by Landlord to any liens being placed upon the Premises, Project or Landlord's interest therein due to any work performed by or for Tenant or deemed to give any contractor or subcontractor or materialman any right or interest in any funds held by Landlord to reimburse Tenant for any portion of the cost of such work. **TENANT SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS LANDLORD, ITS PROPERTY MANAGER, ANY SUBSIDIARY OR AFFILIATE OF THE FOREGOING, AND THEIR RESPECTIVE OFFICERS, DIRECTORS, SHARE-HOLDERS, PARTNERS, EMPLOYEES, MANAGERS, CONTRACTORS, ATTORNEYS AND AGENTS (COLLECTIVELY, THE "INDEMNITEES") FROM AND AGAINST ALL CLAIMS, DEMANDS, CAUSES OF ACTION, SUITS, JUDGMENTS, DAMAGES AND EXPENSES (INCLUDING**

**REASONABLE ATTORNEYS' FEES) IN ANY WAY ARISING FROM OR RELATING TO THE FAILURE BY ANY TENANT PARTY TO PAY FOR ANY WORK PERFORMED, MATERIALS FURNISHED, OR OBLIGATIONS INCURRED BY OR AT THE REQUEST OF A TENANT PARTY**. The foregoing indemnity shall survive termination or expiration of this Lease.

(d) **Signs**.

(i) **General Signs**. Tenant shall have the right to place any signs in, on or around the Building so long as (x) such sign complies with applicable Law, and Tenant shall have received any applicable governmental permit, and (y) Tenant shall have provided Landlord with notice thereof and a copy of any applicable governmental permit(s). Upon request of Landlord, Tenant shall immediately remove any sign or other materials which Tenant has placed or permitted to be placed upon the exterior or interior surface of any door or window inside the Premises, or the exterior of the Building, if required in connection with any repairs to the Building. If Tenant fails to do so, Landlord may without liability unless caused by the gross negligence or willful misconduct of Landlord, its employees, agents or contractors, remove the same at Tenant's expense. Tenant shall comply with such regulations as may from time to time be promulgated by Landlord and provided to Tenant in writing governing signs, advertising material or lettering of all tenants in the Project or Complex, as applicable. Tenant shall be responsible for the repair, painting or replacement of the Building fascia surface or other portion of the Building where signs are attached and/or any damage to the Premises to remove signs placed by Tenant, upon vacation of the Premises, or the removal or alteration of its sign for any reason. If Tenant fails to do so, Landlord may have the sign removed and the reasonable cost of removal shall be payable by Tenant within thirty (30) days of invoice.

(ii) **Building Top Sign(s)**. Subject to the terms of this Section 8 and applicable Laws, Landlord hereby grants Tenant the right, at Tenant's sole cost and expense, to install up to two (2) Building top signs at location(s) elected by Tenant (which may include both Tenant's name, which shall be restricted to only Sangamo Therapeutics, Inc. and corporate logo) ("**Building Top Sign(s)**"). Tenant's Building Top Sign(s) shall be subject to all applicable Laws and Tenant's receipt of any applicable governmental permit(s). The content, size, design, graphics, materials, colors and other specifications of the Building Top Sign(s) (including without limitation, the exact location of any and all of the Building Top Sign(s)) shall be consistent with the exterior design, materials and appearance of the Building and the signage program of the Building, if any. The contractors and/or subcontractors utilized by Tenant in connection with the Building Top Sign(s) may be subject to Landlord's written approval in accordance with Section 8(b)(iii). Tenant shall be responsible for all costs and expenses incurred in connection with the design, construction, installation, repair, operation, maintenance, compliance with laws, utilities (including the costs of metering such utilities usage and the cost of the meter) and removal of the Building Top Sign(s). Tenant shall also be responsible for the cost of all utilities (if any) utilized in connection with the Building Top Sign(s). Tenant's signage rights set forth in this Section 8(d)(ii) shall be personal to the Tenant and may not be assigned to any assignee or any sublessee or any other person or entity (except in connection with a Permitted Transferee). Should the name of Tenant be changed to another name (the "**New Name**"), Tenant shall be entitled to modify, at Tenant's sole cost and expense, Tenant's name on the Building Top Sign(s) to reflect Tenant's New Name, so long as (a) the New Name is not an "**Objectionable Name**", (b) Landlord shall have granted its consent to such New Name (which consent Landlord may withhold in its sole and absolute discretion), (c) Tenant's New Name shall be subject to the then existing signage rights of any tenant or occupant within the Complex, (d) Tenant's New Name shall not cause Landlord to be in violation of another lease or agreement which Landlord is a party at the Complex, and (e) Tenant's New Name shall not cause Landlord to be in violation of an exclusivity granted to another tenant at the Complex. The term "**Objectionable Name**" shall mean any name which relates to an entity which is of a character or reputation, or is associated with a political orientation or faction, which is inconsistent with the quality of the Complex, or which would otherwise reasonably offend a landlord of buildings comparable to and in the vicinity of the Building. In addition, Tenant's right to maintain any of the Building Top Sign(s) shall

terminate at any time during the Lease Term during the continuance of an Event of Default under this Lease. Upon the expiration of the Lease Term or the earlier termination of Tenant's signage rights under this Section 8(d)(ii), Tenant shall, at Tenant's sole cost and expense, remove the Building Top Sign(s) and repair any and all damage to the Building caused by such removal.

9. **Use; Compliance with Laws**. Tenant shall use the Premises only for the Permitted Use (as set forth in the Basic Lease Information) and shall comply with all applicable Laws relating to the use, condition, access to, and occupancy of the Premises and will not commit waste, overload the Building's Structure or the Building's Systems or subject the Premises to any use that would damage the Premises (ordinary wear and tear excepted). Tenant, at its sole cost and expense, shall obtain and keep in effect during the Term, all permits, licenses, and other authorizations necessary to permit Tenant to use and occupy the Premises for the Permitted Use in accordance with applicable Laws. Notwithstanding anything in this Lease to the contrary, as between Landlord and Tenant: (i) Tenant shall bear the risk of complying with Title III of the Americans With Disabilities Act of 1990, any state laws governing handicapped access or architectural barriers, and all rules, regulations, and guidelines promulgated under such laws, as amended from time to time (the "**Disabilities Acts**") with respect to the Premises (but not the Common Areas); and (ii) Landlord shall bear the risk of complying with the Disabilities Acts in the Common Areas (subject to Exhibit C), other than compliance that is necessitated by Tenant's use of the Premises or as a result of the Tenant Improvements as defined on Exhibit D and any Alterations made by Tenant (which risk and responsibility shall be borne by Tenant). Landlord represents and warrants that as of the Delivery Date, the Common Areas shall be in compliance with the Disabilities Acts. The Premises shall not be used for any purpose which releases outside the Premises strong, unusual, or offensive odors, fumes, dust or vapors which is objectionable to a typical person; which emits outside the Premises noise or sounds that are objectionable to a typical person due to intermittence, beat, frequency, shrillness, or loudness; which is associated with indecent or pornographic matters; or which involves political or moral issues (such as abortion issues). Tenant shall conduct its business and control each other Tenant Party so as not to create any nuisance or unreasonably interfere with other tenants of the Complex or Landlord in its management of the Building. Tenant shall store all trash and garbage within the Premises or in a trash dumpster or similar container approved by Landlord as to type, location and screening; and Tenant shall arrange for the regular pick-up of such trash and garbage at Tenant's expense (unless Landlord finds it necessary to furnish such a service, in which event Tenant shall be charged an equitable portion of the total of the charges to all tenants using the service). Tenant shall not operate an incinerator or burn trash or garbage within the Project or Complex, as applicable. Tenant shall not knowingly conduct or permit to be conducted in the Premises any activity, or place any equipment in or about the Premises or the Building, which will invalidate the insurance coverage in effect or increase the rate of fire insurance or other insurance on the Premises or the Building; provided that the Permitted Use will not be deemed to invalidate such insurance coverage or increase the rate of such insurance on the Premises or the Building. If any invalidation of coverage or increase in the rate of fire insurance or other insurance occurs or is threatened by any insurance company due to activity conducted from the Premises in violation of this Lease, or any act or omission by Tenant, or its agents, employees, representatives, or contractors in violation of this Lease, such statement or threat shall be conclusive evidence that the increase in such rate is due to such act of Tenant or the contents or equipment in or about the Premises, and, as a result thereof, Tenant shall be liable for such increase and shall be considered Additional Rent payable with the next monthly installment of Base Rent due under this Lease. In no event shall Tenant introduce or permit to be kept on the Premises or brought into the Building any dangerous, noxious, radioactive or explosive substance in violation of Section 25 herein.

10. **Assignment and Subletting**.

(a) **Transfers**. Except for Permitted Transfers, Tenant shall not, without the prior written consent of Landlord, which consent shall not unreasonably be withheld, conditioned or delayed: (1) assign, transfer, or encumber this Lease or any estate or interest herein, whether directly or by operation of law; (2) permit any other entity to become Tenant hereunder by merger, consolidation, or other

reorganization; (3) if Tenant is an entity other than a corporation whose stock is publicly traded, permit the transfer of an ownership interest in Tenant so as to result in a change in the current control of Tenant; (4) sublet any portion of the Premises; (5) grant any license, concession, or other right of occupancy of any portion of the Premises; or (6) permit the use of the Premises by any parties other than Tenant (any of the events listed in Section 10(a)(1) through Section 10(a)(6) being a "**Transfer**").

(b) **Consent Standards**. If a proposed transferee does not meet the following conditions, Landlord shall not be deemed to have been unreasonable in withholding its consent to a Transfer (provided that the following list shall not be deemed the exclusive factors for review): (1) intentionally omitted; (2) has a good reputation in the business community; (3) will use the Premises for the Permitted Use and will not use the Premises in any manner that would conflict with any exclusive use agreement or other similar agreement entered into by Landlord with any other tenant of the Project or Complex, as applicable; (4) will not use the Premises, Project or Complex in a manner that would materially increase the pedestrian or vehicular traffic to the Premises, Project or Complex; (5) is not another occupant of the Building or Complex, as applicable, and there is a comparable space available in the Complex at the time of Tenant's request for Landlord's consent; and (6) is not a person or entity with whom Landlord is then, or has been within the three-month period prior to the time Tenant seeks to enter into such assignment or subletting, negotiating to lease space in the Building or Complex, as applicable, or any Affiliate of any such person or entity, and there is a comparable space available in the Complex at the time of Tenant's request for Landlord's consent.

(c) **Request for Consent**. If Tenant requests Landlord's consent to a Transfer, then, at least thirty (30) days prior to the effective date of the proposed Transfer, Tenant shall provide Landlord with a written description of all terms and conditions of the proposed Transfer, copies of the proposed pertinent documentation, and the following information about the proposed transferee: name and address; reasonably satisfactory information about its business and business history; its proposed use of the Premises; banking, financial, and other credit information; and general references sufficient to enable Landlord to determine the proposed transferee's creditworthiness and character (collectively, the "**Transfer Notice**"). Concurrently with the Transfer Notice, Tenant shall pay to Landlord a fee of $2,000 to defray Landlord's expenses in reviewing such request, and Tenant shall reimburse Landlord within ten (10) days upon request for its reasonable attorneys' fees incurred in connection with considering any request for consent to a Transfer, not to exceed $2,500 per request.

(d) **Conditions to Consent**. If Landlord consents to a proposed Transfer, then the proposed transferee shall deliver to Landlord a written agreement whereby it expressly assumes Tenant's obligations hereunder. No Transfer shall release Tenant from its obligations under this Lease, but rather Tenant and its transferee shall be jointly and severally liable therefor. Landlord's consent to any Transfer shall not be deemed consent to any subsequent Transfers. Tenant shall pay for the cost of any demising walls or other improvements necessitated by a proposed subletting or assignment.

(e) **Attornment by Subtenants**. Each sublease by Tenant hereunder shall be subject and subordinate to this Lease and to the matters to which this Lease is or shall be subordinate, and each subtenant by entering into a sublease is deemed to have agreed that in the event of termination, re-entry or dispossession by Landlord under this Lease, Landlord may, at its option, either terminate the sublease or take over all of the right, title and interest of Tenant, as sublandlord, under such sublease, and such subtenant shall, at Landlord's option, attorn to Landlord pursuant to the then executory provisions of such sublease, except that Landlord shall not be: (1) liable for any previous act or omission of Tenant under such sublease; (2) subject to any counterclaim, offset or defense that such subtenant might have against Tenant; (3) bound by any previous modification of such sublease or by any rent or additional rent or advance rent which such subtenant might have paid for more than the current month to Tenant, and all such rent shall remain due and owing, notwithstanding such advance payment; (4) bound by any security or advance rental deposit made by such subtenant which is not delivered or paid over to Landlord and with respect to which such subtenant shall look solely to Tenant for refund or reimbursement; or (5) obligated to perform any work in

the subleased space or to prepare it for occupancy, and in connection with such attornment, the subtenant shall execute and deliver to Landlord any instruments Landlord may reasonably request to evidence and confirm such attornment. Each subtenant or licensee of Tenant shall be deemed, automatically upon and as a condition of its occupying or using the Premises or any part thereof, to have agreed to be bound by the terms and conditions set forth in this Section 10(e). The provisions of this Section 10(e) shall be self-operative, and no further instrument shall be required to give effect to this provision. If an Event of Default occurs while the Premises or any part thereof are subject to a sublease, then Landlord, in addition to its other remedies, may collect directly from such subtenant all rents becoming due to Tenant and apply such rents against Rent. Tenant authorizes its subtenant to make payments of rent directly to Landlord upon receipt of notice from Landlord to do so following the occurrence of an Event of Default hereunder.

(f) **Permitted Transfers**. Notwithstanding to the contrary contained in this Lease, Tenant may Transfer all or part of its interest in this Lease or all or part of the Premises (a "**Permitted Transfer**") to the following types of entities (a "**Permitted Transferee**") without the written consent of Landlord:

(1) an Affiliate of Tenant;

(2) any persons acquiring a controlling interest in Tenant in connection with a bona fide private equity placement financing or an initial public offering of Tenant's stocks on a nationally recognized stock exchange;

(3) any corporation, limited partnership, limited liability partnership, limited liability company or other business entity in which or with which Tenant, or its corporate successors or assigns, is merged or consolidated, in accordance with applicable statutory provisions governing merger and consolidation of business entities, so long as (A) Tenant's obligations hereunder are assumed by the entity surviving such merger or created by such consolidation; and (B) the Tangible Net Worth of the surviving or created entity is not less than the Tangible Net Worth of Tenant as of the date of execution of this Lease; or

(4) any corporation, limited partnership, limited liability partnership, limited liability company or other business entity acquiring all or substantially all of Tenant's assets if such entity's Tangible Net Worth after such acquisition is not less than the Tangible Net Worth of Tenant as of the date of execution of this Lease.

Tenant shall promptly notify Landlord of any such Permitted Transfer. Tenant shall remain liable for the performance of all of the obligations of Tenant hereunder, or if Tenant no longer exists because of a merger, consolidation, or acquisition, the surviving or acquiring entity shall expressly assume in writing the obligations of Tenant hereunder. Additionally, the Permitted Transferee shall comply with all of the terms and conditions of this Lease, including the Permitted Use. No later than five (5) Business Days after the effective date of any Permitted Transfer, Tenant agrees to furnish Landlord with (A) copies of the instrument effecting any of the foregoing Transfers, which copies of such instruments may be redacted by Tenant, (B) documentation establishing Tenant's satisfaction of the requirements set forth above applicable to any such Transfer, and (C) evidence of insurance as required under this Lease with respect to the Permitted Transferee, provided that Landlord executes a non-disclosure agreement provided by Tenant. The occurrence of a Permitted Transfer shall not waive Landlord's rights as to any subsequent Transfers. "**Tangible Net Worth**" means the excess of total assets over total liabilities, in each case as determined in accordance with generally accepted accounting principles consistently applied ("**GAAP**"). Any subsequent Transfer by a Permitted Transferee shall be subject to the terms of this Section 10.

(g) **Additional Compensation**. Tenant shall pay to Landlord, immediately upon receipt thereof, fifty percent (50%) of the excess of all compensation received by Tenant for a Transfer over the Rent allocable to the portion of the Premises covered thereby, after deducting the following costs and expenses for such Transfer (which costs will be amortized over the term of the sublease or assignment pursuant to sound accounting principles and deducted monthly from such excess): (1) brokerage commissions and reasonable attorneys' fees; (2) advertising for subtenants or assignees; (3) the actual costs paid in making any improvements or substitutions in the Premises required by any sublease or assignment; and (4) the costs of any inducements or concessions or rental reductions or abatement given to the subtenant or assignee.

(h) **Landlord's Option**. Notwithstanding anything to the contrary contained in this Article 10, except in connection with Permitted Transfers, Landlord shall have the option, by giving written notice to Tenant within thirty (30) days after receipt of any Transfer Notice with respect to (i) a proposed assignment of this Lease by Tenant, or (ii) a proposed sublease of the entire Premises (the "**Subject Space**") to (x) recapture the Subject Space, or (y) take an assignment or sublease of the Subject Space from Tenant. Such recapture, or sublease or assignment notice shall cancel and terminate this Lease, or create a sublease or assignment, as the case may be, with respect to the Subject Space as of the date stated in the Transfer Notice as the effective date of the proposed Transfer until the last day of the term of the Transfer as set forth in the Transfer Notice. If Landlord declines, or fails to elect in a timely manner to recapture, sublease or take an assignment of the Subject Space under this Section 10(h), then, provided Landlord has consented to the proposed Transfer, Tenant shall be entitled to proceed to transfer the Subject Space to the proposed Transferee, subject to provisions of this Section 10.

11. **Insurance; Waivers; Subrogation; Indemnity**.

(a) **Indemnity Agreement**. **TO THE FULLEST EXTENT PERMITTED BY LAW AND SUBJECT TO LANDLORD'S INDEMNIFICATION OBLIGATIONS BELOW AND FURTHER SUBJECT TO THE MUTUAL WAIVERS OF SUBROGATION SET FORTH IN SECTION 11(d), TENANT WILL DEFEND, INDEMNIFY AND HOLD LANDLORD HARMLESS FROM AND AGAINST ALL CLAIMS (AS DEFINED HEREIN) ARISING OUT OF OR RELATING (DIRECTLY OR INDIRECTLY) TO (I) THE CONDUCT OR MANAGEMENT OF THE PREMISES OR OF ANY BUSINESS THEREIN, OR ANY WORK OR THING WHATSOEVER DONE, OR ANY CONDITION CREATING IN OR ABOUT THE PREMISES DURING THE TERM; (II) ANY ACT, OMISSION, BREACH OF ANY PROVISION OF THIS LEASE, OR NEGLIGENCE OF TENANT OR ANY OF TENANT'S LICENSEES OR THE PARTNERS, DIRECTORS, OFFICERS, AGENTS, EMPLOYEES, INVITEES OR CONTRACTORS OF TENANT OR ANY OF TENANT'S LICENSEES; AND (III) ANY ACCIDENT, INJURY OR DAMAGE WHATSOEVER OCCURRING IN OR AT THE PREMISES. TO THE FULLEST EXTENT PERMITTED BY LAW AND SUBJECT TO THE MUTUAL WAIVERS OF SUBROGATION SET FORTH IN SECTION 11(d), LANDLORD AGREES TO INDEMNIFY TENANT AND TENANT PARTY FROM AND AGAINST ANY AND ALL CLAIMS ARISING FROM INJURY OR DEATH OF ANY PERSON OR DAMAGE TO OR LOSS OF ANY PHYSICAL PROPERTY OCCURRING WITHIN OR ABOUT THE PREMISES, THE BUILDING, THE PROJECT AND/OR THE COMPLEX, TO THE EXTENT ARISING OUT OF LANDLORD'S OR INDEMNITEES' GROSS NEGLIGENCE, WILLFUL MISCONDUCT OR BREACH OF THIS LEASE.**

(b) **Tenant's Insurance**. Effective as of the Delivery Date and continuing throughout the Term, Tenant shall maintain insurance of the types and in the amounts described below. Insurance shall be obtained from insurance carriers rated not less than A-VIII by A.M. Best Company and licensed to business in the State. Tenant insurance policy deductibles shall be the responsibility of the Tenant and shall be less than $25,000 unless approved by Landlord. Tenant's insurance policies shall be primary and not

require any contribution by any insurance maintained by Landlord, and Tenant shall require the insurer with respect to each policy required in this Section 11(b) to waive subrogation rights against Landlord and the other Landlord Parties. If Tenant fails to comply with the foregoing insurance requirements or to deliver to Landlord the certificates or evidence of coverage required herein, Landlord, in addition to any other remedy available pursuant to this Lease or otherwise, may, but shall not be obligated to, obtain such insurance and Tenant shall pay to Landlord the cost thereof, plus an administrative fee of three percent (3%) of the cost thereof. It is expressly understood and agreed that the foregoing minimum limits of insurance coverage shall not limit the liability of Tenant for its acts or omissions as provided in this Lease. Tenant may satisfy requirements of this Section 11(b) with policies that cover both the Premises and other properties, on condition that any general aggregate limits under these "blanket" policies apply separately to the Premises, the requirements in this Section 11(b) are otherwise satisfied, and these policies do not otherwise impair the rights of Landlord or violate requirements of this Lease. Certificates for all insurance carried pursuant to this Section 11(b) shall be delivered to Landlord before the Delivery Date and thereafter upon request and (even if not requested) upon the renewal or replacement of any required policy. Tenant shall ensure that Landlord is notified no less than ten (10) days before cancellation of any required policy, and shall cause its certificates of insurance to indicate this. Failure of Landlord to demand such certificate or other evidence of full compliance with these insurance requirements or failure of Landlord to identify a deficiency from evidence that is provided shall not be construed as a waiver of Tenant's obligation to maintain such insurance. These requirements and limits are subject to review and modification by Landlord in its commercially reasonable determination (i) in recognition of changes in the occupancy, exposure, or insurance marketplace, and/or (ii) as a result of Tenant's use of Hazardous Materials or other items in the Premises as set forth in the list of Hazardous Materials in the Environmental Questionnaire attached hereto as Exhibit J to be provided by Tenant to Landlord no later than the Commencement Date. The term "**Landlord Parties**" means Landlord; Landlord's property manager with respect to the Premises; Landlord's Mortgagee; other entities or individuals Landlord may designate from time to time to be included as additional insureds (e.g., by requiring that they be listed as additional insureds on certificates of insurance); the successors and assigns, and direct and indirect affiliates, of each of the foregoing; and, with respect to each of the foregoing, its shareholders, trustees, beneficiaries, managers, officers, directors, employees, and agents.

(i) **Commercial General Liability Insurance** written on an occurrence basis, using a form that is at least as broad as ISO commercial general liability form (CG 00 01) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract naming the Landlord and the other Landlord Parties as additional insureds on a primary and non-contributory basis with limits of not less than $1,000,000 each occurrence and $2,000,000 aggregate per location shall be maintained. Evidence of commercial general liability insurance granting no less than thirty (30) days' notice of cancellation for reasons other than non-payment shall be provided by the ISO form (CG 20 11, CG 20 26 11 85, or a substitute providing equivalent coverage and under the commercial umbrella policy) prior to Lease inception and no less than fifteen (15) days prior to each insurance policy renewal during the term of the Lease.

(ii) **Commercial Auto Liability Insurance,** if the Tenant owns any automobiles, written on a coverage form that is at least as broad as the ISO business auto coverage form (CA 00 01) to cover owned, non-owned, hired, and borrowed autos with not less than $1,000,000 combined single limit shall be obtained. If the Tenant does not own any vehicles, non-owned and hired auto liability insurance with a not less than $1,000,000 limit shall be maintained. Tenant shall require similar coverage for any contract vehicles that it engages for transportation of personnel or personal property to or from the Premises.

(iii) **Workers Compensation Insurance** with limits as required by statute shall be maintained.

(iv) **Employers' Liability Insurance** with limits not less than $1,000,000 per accident for bodily injury by accident, $1,000,000 each employee for bodily injury by disease, and $1,000,000 policy limit for bodily injury by disease shall be maintained.

(v) **Umbrella or Excess Liability Insurance** over (i), (ii), and (iv) with limits of not less than $4,000,000 each occurrence and $4,000,000 aggregate per location. This insurance must also include the Landlord Parties as additional insureds insofar as it is excess over Tenant's coverage under clause (i), on a primary and non-contributory basis.

(vi) **Commercial Property Insurance** with a limit equal to the full replacement cost and covering the fixtures, personal property, equipment, Tenant Improvements and betterments that will, at a minimum, cover the perils insured under ISO special causes of loss form (CP 10 30) and broad causes of loss form (CP 10 20) shall be provided.

(vii) If required by Landlord due to the nature of tenant's operation, **Boiler & Machinery Insurance** covering the fixtures, personal property, equipment, tenant improvements and betterments from loss or damage caused by machinery breakdown or the explosion of steam boilers or pipes.

(viii) Intentionally omitted.

(ix) **Business Income insurance** with a limit adequate to pay for one year's loss of business income resulting from suspension of the Tenant's business operations, caused by property damage from a covered cause of loss to the Premises.

(c) **Landlord's Insurance**. Throughout the Term of this Lease, Landlord shall maintain, as a minimum, the following insurance policies. Tenant shall pay its Proportionate Share of the cost of all insurance carried by Landlord with respect to the Project or Complex, as set forth in Exhibit C. Landlord's insurance policies shall be for the sole benefit of Landlord and under Landlord's sole control, and Tenant shall have no right or claim to any proceeds thereof or any other rights thereunder:

(i) **Building Insurance** with a limit equal to full replacement cost less a commercially-reasonable deductible if the Landlord so chooses.

(ii) **Commercial General Liability and Umbrella Insurance** in an amount not less than $5,000,000.

(iii) **Other insurance** and additional coverage as Landlord may deem necessary, but not in excess of that incurred by comparable landlords for comparable buildings in the Project's market area.

(d) No Subrogation. **LANDLORD AND TENANT EACH WAIVES ANY CLAIM IT MIGHT HAVE AGAINST THE OTHER FOR ANY DAMAGE TO OR THEFT, DESTRUCTION, LOSS, OR LOSS OF USE OF ANY PROPERTY, TO THE EXTENT THE SAME IS INSURED AGAINST UNDER ANY INSURANCE POLICY THAT COVERS THE BUILDING, THE PREMISES, LANDLORD'S OR TENANT'S FIXTURES, PERSONAL PROPERTY, LEASEHOLD IMPROVEMENTS, OR BUSINESS, OR IS REQUIRED TO BE INSURED AGAINST UNDER THE TERMS HEREOF OR UNDER THE TENANT WORK LETTER, REGARDLESS OF WHETHER THE NEGLIGENCE OF THE OTHER PARTY CAUSED SUCH LOSS. TENANT'S WAIVER IN THIS SECTION EXTENDS TO ALL LANDLORD PARTIES. LANDLORD AND TENANT EACH HEREBY WAIVE ANY RIGHT OF SUBROGATION AND RIGHT OF RECOVERY OR CAUSE OF ACTION FOR INJURY INCLUDING DEATH OR DISEASE TO RESPECTIVE EMPLOYEES OF EITHER AS COVERED BY WORKER'S COMPENSATION (OR WHICH WOULD HAVE BEEN COVERED IF TENANT OR LANDLORD**

**AS THE CASE MAY BE, WAS CARRYING THE INSURANCE AS REQUIRED BY THIS LEASE). EACH PARTY SHALL CAUSE ITS INSURANCE CARRIER TO ENDORSE ALL APPLICABLE POLICIES WAIVING THE CARRIER'S RIGHTS OF RECOVERY UNDER SUBROGATION OR OTHERWISE AGAINST THOSE IN WHOSE FAVOR IT MAKES THE WAIVER IN THIS SECTION.**

12. **Subordination; Attornment; Notice to Landlord's Mortgagee**.

(a) **Subordination**. This Lease shall be subordinate to any deed of trust, mortgage, or other security instrument (each, a "**Mortgage**"), or any ground lease, master lease, or primary lease (each, a "**Primary Lease**"), that now or hereafter covers all or any part of the Premises (the mortgagee under any such Mortgage, beneficiary under any such deed of trust, or the lessor under any such Primary Lease is referred to herein as a "**Landlord's Mortgagee**"). The automatic subordination to Landlord's Mortgagee provided for in this Section 12 is expressly conditioned upon such Landlord's Mortgagee, agreeing that as long as no Event of Default occurs under this Lease, such Landlord's Mortgagee will not disturb Tenant's rights of possession under this Lease. Any Landlord's Mortgagee may elect at any time, unilaterally, to make this Lease superior to its Mortgage, Primary Lease, or other interest in the Premises by so notifying Tenant in writing. The provisions of this Section shall be self-operative and no further instrument of subordination shall be required; however, in confirmation of such subordination, Tenant shall, subject to Tenant's receipt of a commercially reasonable non-disturbance agreement, execute and return to Landlord (or such other party designated in writing by Landlord) within ten (10) Business Days after written request therefor such documentation, in recordable form if required, as a Landlord's Mortgagee may reasonably request to evidence the subordination of this Lease to such Landlord's Mortgagee's Mortgage or Primary Lease (including a subordination, non-disturbance and attornment agreement) or, if the Landlord's Mortgagee so elects, the subordination of such Landlord's Mortgagee's Mortgage or Primary Lease to this Lease. Notwithstanding the foregoing, Tenant shall not be obligated to execute any document which alters any material provision of the Lease.

(b) **Attornment**. Tenant shall attorn to any party succeeding to Landlord's interest in the Premises, whether by purchase, foreclosure, deed in lieu of foreclosure, power of sale, termination of lease, or otherwise, upon such party's request, and shall execute such commercially reasonable agreements confirming such attornment as such party may reasonably request. Notwithstanding the foregoing, Tenant shall not be obligated to execute any document which alters any material provision of the Lease.

(c) **Notice to Landlord's Mortgagee**. Tenant shall not seek to enforce any remedy it may have for any default on the part of Landlord without first giving written notice by certified mail, return receipt requested, specifying the default in reasonable detail, to any Landlord's Mortgagee whose address has been given to Tenant, and affording such Landlord's Mortgagee a reasonable opportunity to perform Landlord's obligations hereunder.

13. **Rules and Regulations**. Tenant shall comply with the rules and regulations of the Building (the "**Rules and Regulations**") which are attached hereto as Exhibit E. Landlord may, from time to time, change such rules and regulations for the safety, care, or cleanliness of the Building and related facilities, provided that such changes are applicable to all tenants of the Building (if the Building is no longer a single tenant building), will not unreasonably interfere with Tenant's use of the Premises, will not modify any of the provisions of the Lease, are provided to Tenant in writing and are enforced by Landlord in a non-discriminatory manner. Tenant shall be responsible for the compliance with such rules and regulations by each Tenant Party. The Rules and Regulations shall not be construed in any way to modify or amend, in whole or part, the terms, covenants, agreements and conditions of this Lease, and in the event of any conflict between the terms of Rules and Regulations and this Lease, terms of this Lease shall control.

14. **Condemnation**.

(a) **Total Taking**. If the entire Building or Premises are taken by right of eminent domain or conveyed in lieu thereof (a "**Taking**"), this Lease shall terminate as of the date of the Taking.

(b) **Partial Taking - Tenant's Rights**. If any part of the Building becomes subject to a Taking and such Taking will prevent Tenant from conducting its business in the Premises in a manner reasonably comparable to that conducted immediately before such Taking for a period of more than one hundred twenty (120) days, then Tenant may terminate this Lease as of the date of such Taking by giving written notice to Landlord within thirty (30) days after the Taking, and Rent shall be apportioned as of the date of such Taking. If Tenant does not terminate this Lease, then Rent shall be abated on a reasonable basis as to that portion of the Premises rendered untenantable by the Taking. **TENANT HEREBY WAIVES ANY AND ALL RIGHTS IT MIGHT OTHERWISE HAVE PURSUANT TO SECTION 1265.130 OF THE CALIFORNIA CODE OF CIVIL PROCEDURE.**

(c) **Partial Taking - Landlord's Rights**. If any material portion, but less than all, of the Building becomes subject to a Taking, or if Landlord is required to pay any of the proceeds arising from a Taking to a Landlord's Mortgagee, then Landlord may terminate this Lease by delivering written notice thereof to Tenant within fifteen (15) days after such Taking, and Rent shall be apportioned as of the date of such Taking. If Landlord does not so terminate this Lease, then this Lease will continue, but if any portion of the Premises has been taken, Rent shall abate as provided in the next to last sentence of Section 14(b).

(d) **Award**. If any Taking occurs, then Landlord shall receive the entire award or other compensation for the Land, the Building, and other improvements taken; however, Tenant may separately pursue a claim (to the extent it will not reduce Landlord's award) against the condemnor for the value of Tenant's personal property which Tenant is entitled to remove under this Lease, moving costs, loss of business, and other claims it may have (excluding any claim related to its leasehold interest).

(e) **Repair**. If the Lease is not terminated, Landlord shall promptly proceed with reasonable diligence to restore the remaining part of the Premises and Building substantially to their former condition to the extent feasible to constitute a complete and tenantable Building and Premises; provided, however, that Landlord shall only be required to reconstruct building standard leasehold improvements existing in the Premises as of the date of the Taking, and Tenant shall be required to pay the cost for restoring any other leasehold improvements, and the Rent shall be decreased proportionately to reflect the loss of any portion of the Premises rendered untenantable during the restoration thereof. In no event shall Landlord be required to spend more than the condemnation proceeds received by Landlord for such repair.

15. **Fire or Other Casualty**.

(a) **Repair Estimate**. If the Premises or the Building are damaged by fire or other casualty (a "**Casualty**"), Landlord shall use good faith efforts to deliver to Tenant within sixty (60) days after such Casualty a good faith estimate (the "**Damage Notice**") of the time needed to repair the damage caused by such Casualty.

(b) **Tenant's Rights**. If a material portion of the Premises is damaged by Casualty such that Tenant is prevented from conducting its business in the Premises in a manner reasonably comparable to that conducted immediately before such Casualty, and Landlord estimates that the damage caused thereby cannot be repaired within two hundred seventy (270) days after the date of the Casualty (the "**Repair Period**"), then Tenant may terminate this Lease by delivering written notice to Landlord of its election to terminate within thirty (30) days after the Damage Notice has been delivered to Tenant. Tenant shall also have the right to terminate if Casualty occurs during the last one (1) year of the Term and the Casualty substantially impairs, in Tenant's reasonable judgment, Tenant's operation of its business in the Premises for more than sixty (60) days.

(c) **Landlord's Rights**. If a Casualty damages the Premises or a material portion of the Building and: (1) Landlord estimates that the damage to the Premises cannot be repaired within the Repair Period; (2) the damage to the Premises exceeds fifty percent (50%) of the replacement cost thereof (excluding foundations and footings), as estimated by Landlord, and such damage occurs during the last eighteen (18) months of the Term (unless Tenant exercises any renewal rights it may have in the Lease); (3) regardless of the extent of damage to the Premises, Landlord makes a good faith determination that restoring the Building would be uneconomical; or (4) Landlord is required to pay any insurance proceeds arising out of the Casualty to a Landlord's Mortgagee, then Landlord may terminate this Lease by giving written notice of its election to terminate within thirty (30) days after the Damage Notice has been delivered to Tenant.

(d) **Repair Obligation**. If neither party elects to terminate this Lease following a Casualty, then Landlord shall, within a reasonable time after such Casualty, begin to repair the Premises and shall proceed with reasonable diligence to restore the Premises to substantially the same condition as they existed immediately before such Casualty; however, other than building standard leasehold improvements Landlord shall not be required to repair or replace any Tenant Improvements or Alterations or betterments within the Premises (which shall be promptly and with due diligence repaired and restored by Tenant at Tenant's sole cost and expense) or any furniture, equipment, trade fixtures or personal property of Tenant or others in the Premises or the Building, and Landlord's obligation to repair or restore the Premises shall be limited to the extent of the insurance proceeds actually received by Landlord for the Casualty in question. If Landlord fails to complete repairs to the Premises within two hundred seventy (270) days after the date of the Casualty, subject to delays caused by Force Majeure Events, then Tenant shall have the right to terminate the Lease upon written notice delivered to Landlord at any time after such two hundred seventy (270) day period and prior to Landlord's substantial completion of such repairs.

(e) **Abatement of Rent**. If the Premises are damaged by Casualty, Rent for the portion of the Premises rendered untenantable by the damage shall be abated on a reasonable basis from the date of damage until the completion of Landlord's repairs (or until the date of termination of this Lease by Landlord or Tenant as provided above, as the case may be).

(f) **Waiver of Statutory Provisions**. The provisions of this Lease, including this Section 15, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, the Building or any other portion of the Project, and any statute or regulation of the State of California, including, without limitation, Sections 1932(2) and 1933(4) of the California Civil Code, with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any other statute or regulation, now or hereafter in effect, shall have no application to this Lease or any damage or destruction to all or any part of the Premises, the Building or any other portion of the Project.

16. **Personal Property Taxes**. Tenant shall be liable for all taxes levied or assessed against personal property, furniture, or fixtures placed by Tenant in the Premises or in or on the Building or Project. If any taxes for which Tenant is liable are levied or assessed against Landlord or Landlord's property and Landlord elects to pay the same, or if the assessed value of Landlord's property is increased by inclusion of such personal property, furniture or fixtures and Landlord elects to pay the taxes based on such increase, then Tenant shall pay to Landlord, within thirty (30) days following written request therefor, the part of such taxes for which Tenant is primarily liable hereunder.

17. **Events of Default**. Each of the following occurrences shall be an "**Event of Default**":

(a) **Payment Default**. Tenant's failure to pay Rent within five (5) calendar days after Tenant's receipt of Landlord's written notice that the same is due;

(b) **Abandonment**. Tenant abandons the Premises or any substantial portion thereof, abandonment being defined as Tenant's vacation of the Premises and failure to meet one (1) or more lease obligations;

(c) **Intentionally Omitted**;

(d) **Insurance**. Tenant fails, within ten (10) business days following written notice from Landlord, to procure, maintain and deliver to Landlord evidence of the insurance policies and coverages as required under Section 11(b);

(e) **Mechanic's Liens**. Tenant fails to pay and release of record, or diligently contest and bond around, any mechanic's lien filed against the Premises or the Project for any work performed, materials furnished, or obligation incurred by or at the request of Tenant, within the time and in the manner required by Section 8(c);

(f) **Other Defaults**. Tenant's failure to perform, comply with, or observe any other agreement or obligation of Tenant under this Lease and the continuance of such failure for a period of thirty (30) calendar days or more after Landlord has delivered to Tenant written notice thereof; provided, however, if such default is of the type which cannot reasonably be cured within thirty (30) days, then Tenant shall have such longer time as is reasonably necessary provided Tenant commences to cure within ten (10) days after receipt of written notice from Landlord and diligently prosecutes such cure to completion; and

(g) **Insolvency**. The filing of a petition by or against Tenant (the term "**Tenant**" shall include, for the purpose of this Section 17(g), any guarantor of Tenant's obligations hereunder): (1) in any bankruptcy or other insolvency proceeding; (2) seeking any relief under any state or federal debtor relief law; (3) for the appointment of a liquidator or receiver for all or substantially all of Tenant's property or for Tenant's interest in this Lease; or (4) for the reorganization or modification of Tenant's capital structure; however, if such a petition is filed against Tenant, then such filing shall not be an Event of Default unless Tenant fails to have the proceedings initiated by such petition dismissed within one hundred twenty (120) calendar days after the filing thereof.

18. **Remedies**. Upon an Event of Default, Landlord shall have, in addition to any other remedies available to Landlord at law or in equity, the option to pursue any one or more of the following remedies, each and all of which shall be cumulative and nonexclusive, without any notice or demand whatsoever.

(a) Terminate this Lease, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying the Premises or any part thereof, without being liable for prosecution or any claim for damages therefor; and Landlord may recover from Tenant the following:

(i) The worth at the time of award of any unpaid rent which has been earned at the time of such termination; plus

(ii) The worth at the time of award of the amount by which the unpaid rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(iii) The worth at the time of award of the amount by which the unpaid rent for the balance of the Lease Term after the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(iv) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary

course of things would be likely to result therefrom, specifically including, but not limited to, brokerage commissions and advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant; and

(v) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

The term "**rent**" as used in this Section 18 shall be deemed to be and to mean all sums of every nature required to be paid by Tenant pursuant to the terms of this Lease, whether to Landlord or to others. As used in Sections 18(a)(i) and (ii) above, the "worth at the time of award" shall be computed by allowing interest at the Default Rate, but in no case greater than the maximum amount of such interest permitted by law. As used in Section 18(a)(iii) above, the "worth at the time of award" shall be computed by discounting such amount at the discount rate of the Federal Reserve Bank of San Francisco at the time of award plus one percent (1%).

(b) Landlord shall have the remedy described in California Civil Code Section 1951.4 (lessor may continue lease in effect after lessee's breach and abandonment and recover Rent as it becomes due, if lessee has the right to sublet or assign, subject only to reasonable limitations). Accordingly, if Landlord does not elect to terminate this Lease on account of any Event of Default by Tenant, Landlord may, from time to time, without terminating this Lease, enforce all of its rights and remedies under this Lease, including the right to recover all rent as it becomes due.

(c) **Subleases of Tenant**. Whether or not Landlord elects to terminate this Lease on account of any Event of Default by Tenant, as set forth in this Section 18, Landlord shall have the right to terminate any and all subleases, licenses, concessions or other consensual arrangements for possession entered into by Tenant and affecting the Premises or may, in Landlord's sole discretion, succeed to Tenant's interest in such subleases, licenses, concessions or arrangements. In the event of Landlord's election to succeed to Tenant's interest in any such subleases, licenses, concessions or arrangements, Tenant shall, as of the date of notice by Landlord of such election, have no further right to or interest in the rent or other consideration receivable thereunder.

(d) **Form of Payment After Default**. Following the occurrence of an Event of Default by Tenant, Landlord shall have the right to require that any or all subsequent amounts paid by Tenant to Landlord hereunder, whether in the cure of the default in question or otherwise, be paid in the form of cash, money order, cashier's or certified check drawn on an institution reasonably acceptable to Landlord, or by other means approved by Landlord, notwithstanding any prior practice of accepting payments in any different form.

(e) **Efforts to Relet**. For the purposes of this Section 18, Tenant's right to possession shall not be deemed to have been terminated by efforts of Landlord to relet the Premises, by its acts of maintenance or preservation with respect to the Premises, or by appointment of a receiver to protect Landlord's interests hereunder. The foregoing enumeration is not exhaustive, but merely illustrative of acts which may be performed by Landlord without terminating Tenant's right to possession.

(f) **Landlord Defaults and Tenant Remedies**. Except as otherwise provided in this Lease and specifically subject to Section 26(b), if Landlord fails in the performance of any of Landlord's obligations under this Lease and such failure continues for thirty (30) days after Landlord's receipt of written notice thereof from Tenant (and an additional reasonable time after such receipt if (A) such failure cannot be cured within such thirty (30) day period, and (B) Landlord commences curing such failure within such thirty (30) day period and thereafter diligently pursues the curing of such failure), then Tenant shall be entitled to exercise any remedies that Tenant may have at law or in equity. **TENANT WAIVES ANY**

**RIGHT TO OBTAIN ANY CONSEQUENTIAL, SPECIAL, PUNITIVE, EXEMPLARY OR SIMILAR DAMAGES**.

19. **Payment by Tenant; Non-Waiver; Cumulative Remedies**.

(a) **Payment by Tenant**. Upon any Event of Default, Tenant shall pay to Landlord all reasonable costs incurred by Landlord (including court costs and reasonable attorneys' fees and expenses) in: (1) obtaining possession of the Premises; (2) removing and storing Tenant's or any other occupant's property; (3) repairing, restoring, altering, remodeling, or otherwise putting the Premises into condition reasonably acceptable to a new tenant (provided that Tenant shall not be responsible for costs to change the character of the Premises from an office use to a primarily retail, industrial or other non-office type of use); (4) if Tenant is dispossessed of the Premises and this Lease is not terminated, reletting all or any part of the Premises (including brokerage commissions, cost of tenant finish work, and other costs incidental to such reletting); (5) performing Tenant's obligations which Tenant failed to perform; and (6) enforcing, or advising Landlord of, its rights, remedies, and recourses arising out of the Event of Default. To the full extent permitted by Law, Landlord and Tenant agree the federal and state courts of the state in which the Premises are located shall have exclusive jurisdiction over any matter relating to or arising from this Lease and the parties' rights and obligations under this Lease.

(b) **No Waiver**. Landlord's acceptance of Rent following an Event of Default shall not waive Landlord's rights regarding such Event of Default. No waiver by Landlord of any violation or breach of any of the terms contained herein shall waive Landlord's rights regarding any future violation of such term. Landlord's acceptance of any partial payment of Rent shall not waive Landlord's rights with regard to the remaining portion of the Rent that is due, regardless of any endorsement or other statement on any instrument delivered in payment of Rent or any writing delivered in connection therewith; accordingly, Landlord's acceptance of a partial payment of Rent shall not constitute an accord and satisfaction of the full amount of the Rent that is due.

(c) **Cumulative Remedies**. Any and all remedies set forth in this Lease: (1) shall be in addition to any and all other remedies Landlord may have at law or in equity; (2) shall be cumulative; and (3) may be pursued successively or concurrently as Landlord may elect. The exercise of any remedy by Landlord shall not be deemed an election of remedies or preclude Landlord from exercising any other remedies in the future.

20. **Intentionally Omitted**.

21. **Surrender of Premises**.

(a) General. No act by Landlord shall be deemed an acceptance of a surrender of the Premises, and no agreement to accept a surrender of the Premises shall be valid unless it is in writing and signed by Landlord. At the expiration or termination of this Lease, Tenant shall deliver to Landlord the Premises with all improvements located therein in good repair and condition, free of Hazardous Materials for which Tenant has responsibility under this Lease, in broom-clean condition including cleaning of interior surface of all walls, flooring, ceiling and/ or roof deck due to Tenant's specific use (with such cleaning by commercial cleaning application as reasonably approved by Landlord), reasonable wear and tear and condemnation and Casualty damage (as to which Section 14 and Section 15 shall control) excepted, and shall deliver to Landlord all keys to the Premises. Tenant shall remove all unattached trade fixtures, furniture, and personal property placed in the Premises or elsewhere in the Building by Tenant (but Tenant may not remove any such item which was paid for, in whole or in part, by Landlord or any wiring or cabling unless Landlord requires such removal). Additionally, at Landlord's option, Tenant shall (not later than ten (10) days after the expiration or earlier termination of the Lease) remove such alterations, additions (including stairs and bank vaults), improvements, trade fixtures, personal property, equipment, wiring, conduits, cabling and furniture (including Tenant's Off-Premises Equipment) installed by Tenant as Landlord may request; however, Tenant shall not be required to remove either the Tenant Improvements or

any Alterations to the Premises or the Project unless a Removal Notice was provided to Tenant at the time of Landlord's consent to installation. Tenant shall repair all damage caused by such removal. All items not so removed shall, at Landlord's option, be deemed to have been abandoned by Tenant and may be appropriated, sold, stored, destroyed, or otherwise disposed of by Landlord at Tenant's cost without notice to Tenant and without any obligation to account for such items; any such disposition shall not be considered a strict foreclosure or other exercise of Landlord's rights in respect of the security interest granted under Section 20. The provisions of this Section 21 shall survive the expiration or earlier termination of the Lease.

(b) Environmental Assessment. Prior to the expiration of the Lease (or within thirty (30) days after any earlier termination) plus additional time (but in no event in excess of thirty (30) days) as may be required by Tenant to obtain governmental sign-offs in connection with the decommissioning, Tenant shall clean and otherwise decommission all interior surfaces (including floors, walls, ceilings, and counters), piping, supply lines, waste lines and plumbing in or serving the Premises, and all exhaust or other ductwork in or serving the Premises, in each case that has carried, released or otherwise been exposed to any Hazardous Materials due to Tenant's use or occupancy of the Premises, and shall otherwise clean the Premises so as to permit the Environmental Assessment called for by this Section 21(b) to be issued. For the avoidance of doubt, Tenant shall not be liable for any Hazardous Materials (i) which were placed on the Premises or the Project by Landlord or its employees, agents or contractors or any third parties not under Tenant's control, (ii) which were located at the Premises or the Project on the Delivery Date, or (iii) which migrated through air, water or soil from a location outside of the Premises through no act, omission or fault of Tenant or Tenant Party. Prior to the expiration of this Lease (or within thirty (30) days after any earlier termination), Tenant, at Tenant's expense, shall obtain for Landlord a report (an "**Environmental Assessment**") addressed to Landlord (and, at Tenant's election, Tenant) by a reputable licensed environmental engineer or industrial hygienist that is designated by Tenant and acceptable to Landlord in Landlord's reasonable discretion, which report shall be based on the environmental engineer's inspection of the Premises and shall state, to Landlord's reasonable satisfaction, that: (a) the Hazardous Materials described in the first sentence of this paragraph, to the extent, if any, existing prior to such decommissioning, have been removed in accordance with applicable Laws; (b) all Hazardous Materials described in the first sentence of this paragraph, if any, have been removed in accordance with Applicable Laws from the interior surfaces of the Premises (including floors, walls, ceilings, and counters), piping, supply lines, waste lines and plumbing, and all such exhaust or other ductwork in the Premises, may be reused by a subsequent tenant or disposed of in compliance with applicable Laws without incurring special costs or undertaking special procedures for demolition, disposal, investigation, assessment, cleaning or removal of such Hazardous Materials and without giving notice in connection with such Hazardous Materials; and (c) the Premises may be reoccupied for office, research and development, or laboratory use, demolished or renovated without incurring special costs or undertaking special procedures for disposal, investigation, assessment, cleaning or removal of Hazardous Materials described in the first sentence of this paragraph and without giving notice in connection with Hazardous Materials. Further, for purposes of clauses (b) and (c), "special costs" or "special procedures" shall mean costs or procedures, as the case may be, that would not be incurred but for the nature of the Hazardous Materials as Hazardous Materials instead of non-hazardous materials. The report shall also include reasonable detail concerning the clean-up measures taken, the clean-up locations, the tests run and the analytic results. Tenant shall submit to Landlord the identity of the applicable consultants and the scope of the proposed Environmental Assessment for Landlord's reasonable review and approval at least thirty (30) days prior to commencing the work described therein or at least sixty (60) days prior to the expiration of the Lease Term, whichever is earlier.

(c) Remedies. If Tenant fails to perform its obligations under Section 21(b), without limiting any other right or remedy, Landlord may, on five (5) Business Days' prior written notice to Tenant perform such obligations at Tenant's expense if Tenant has not commenced to do so within said five (5) Business Day period, and Tenant shall within ten (10) days of written demand reimburse Landlord for all

reasonable out-of-pocket costs and expenses incurred by Landlord in connection with such work. Tenant's obligations under Section 21(b) shall survive the expiration or earlier termination of this Lease. In addition, at Landlord's election, Landlord may inspect the Premises and/or the Project for Hazardous Materials at Landlord's cost and expense within sixty (60) days of Tenant's surrender of the Premises at the expiration or earlier termination of this Lease. Tenant shall pay for all such reasonable costs and expenses incurred by Landlord in connection with such inspection if such inspection reveals that a release or threat of release of Hazardous Materials exists at the Project or Premises as a result of the violation of Section 25 by Tenant or a Tenant Party.

22. **Holding Over**. If Tenant fails to vacate the Premises at the end of the Term, then Tenant shall be a tenant at sufferance and, in addition to all other damages and remedies to which Landlord may be entitled for such holding over, Tenant shall pay, in addition to the other Rent, Base Rent equal to one hundred fifty percent (150%) of the Base Rent payable during the last month of the Term (as applicable, the "Holdover Rate"), and Tenant shall otherwise continue to be subject to all of Tenant's obligations under this Lease. The provisions of this Section 22 shall not be deemed to limit or constitute a waiver of any other rights or remedies of Landlord provided herein or at Law. **IF TENANT FAILS TO SURRENDER THE PREMISES UPON THE TERMINATION OR EXPIRATION OF THIS LEASE (EXCEPT AS SET FORTH IN THE FOLLOWING SENTENCE), IN ADDITION TO ANY OTHER LIABILITIES TO LANDLORD ACCRUING THEREFROM, TENANT SHALL PROTECT, DEFEND, INDEMNIFY AND HOLD LANDLORD HARMLESS FROM ALL LOSS, COSTS (INCLUDING REASONABLE ATTORNEYS' FEES) AND LIABILITY RESULTING FROM SUCH FAILURE, INCLUDING ANY CLAIMS MADE BY ANY SUCCEEDING TENANT FOUNDED UPON SUCH FAILURE TO SURRENDER, AND ANY LOST PROFITS TO LANDLORD RESULTING THEREFROM**. Notwithstanding the foregoing, if Tenant remains in the Premises at the end of the Term with the written consent of Landlord, then Tenant shall be a month-to-month tenant at the Holdover Rate, and Tenant shall otherwise continue to be subject to all of Tenant's obligations under this Lease.

23. **Certain Rights Reserved by Landlord**. Provided that the exercise of such rights does not unreasonably interfere with Tenant's access to and occupancy of the Premises, Landlord shall have the following rights:

(a) **Building Operations**. To make such inspections, repairs, alterations, additions, changes, or improvements, whether structural or otherwise, as are expressly provided in this Lease, in and about the Project or Complex, as applicable, or any part thereof; to enter upon the Premises (after giving Tenant prior notice thereof, which may be oral notice, except in cases of real or apparent emergency, in which case no notice shall be required) and, during the continuance of any such work, to temporarily close public space; to interrupt or temporarily suspend Building services and facilities; and to change the arrangement and location of entrances or passageways, doors, and doorways, corridors, elevators, stairs, restrooms, or other public parts of the Building (after giving Tenant three (3) business days' notice thereof, except in cases or real or apparent emergency, in which case no notice shall be required);

(b) **Security**. To take such reasonable security measures as Landlord deems reasonably advisable (provided, however, that any such security measures are for Landlord's own protection, and Tenant acknowledges that Landlord is not a guarantor of the security or safety of any Tenant Party and that such security matters are the responsibility of Tenant); including evacuating the Building for cause, suspected cause, or for drill purposes; temporarily denying access to the Building;

(c) **Prospective Purchasers and Lenders**. To enter the Premises at all reasonable hours to show the Premises to prospective purchasers or lenders upon prior notice (which may be oral notice); and

(d) **Prospective Tenants**. At any time during the last nine (9) months of the Term (or earlier if Tenant has notified Landlord in writing that it does not desire to renew the Term) or at any time

following the occurrence of an Event of Default, to enter the Premises at all reasonable hours upon reasonable advance notice to show the Premises to prospective tenants.

24. **Cell Tower Equipment**. Tenant hereby acknowledges that as of the date hereof, there are two cell tower equipment located on the roof of the Building and related equipment located in the electrical room in the underground parking garage (collectively, "**Cell Tower Equipment**"), which Cell Tower Equipment are owned by Pacific Bell Mobile Services and Spring Spectrum Realty Company L.P. ("**Cell Tower Owners**"). Landlord hereby represents to Tenant that the location and size of each Cell Tower Equipment on the rooftop and related equipment in the electric room in the underground parking garage on Exhibit K attached to this Lease are accurate depiction of the current location and current size of the Cell Tower Equipment, and that the location or the size of the Cell Tower Equipment shall not be modified during the Term, except as otherwise provided in the following: (i) Communications Site Lease Agreement dated as of September 18, 1995, as amended, for Pacific Bell Mobile Services, and (ii) PCS Site Agreement dated as of May 20, 1996, as amended, for Spring Spectrum Realty Group (such items set forth in (i) and (ii) to be collectively referred to as the "**Cell Tower Leases**"). Tenant shall not have any rights to access, use or have any other right to such Cell Tower Equipment. Tenant shall provide Landlord and the Cell Tower Owners with access to the Cell Tower Equipment (which shall be through the stairway inside the Building) upon reasonable advance notice (which may be oral notice), provided that (i) Landlord and/or the Cell Tower Owners shall not unreasonably disturb Tenant's use of the Premises in connection with their access to the Cell Tower Equipment, and (ii) Tenant's facility manager shall have the right to accompany such Cell Tower Owners to where the Cell Tower Equipment are located. Landlord shall promptly notify Tenant pursuant to Landlord's receipt of notification from any Cell Tower Owner that such Cell Tower Owner shall be accessing the Cell Tower Equipment. Except due to the acts, omissions, and/or willful misconduct of Landlord, Landlord Parties or Cell Tower Owners, Tenant shall indemnify, defend, protect and hold harmless Landlord and its partners, trustees and their officers, directors, shareholders, beneficiaries, agents, servants, employees and independent contractors from all claim, loss, cost, damage, expense and liability (including, without limitation, court costs and reasonable attorneys' fees) incurred in connection with or arising from any willful misconduct or gross negligence of Tenant or its partners, trustees and their officers, directors, shareholders, beneficiaries, agents, servants, employees and independent contractors in connection with the Cell Tower Equipment during the Term of this Lease.

During the Term of this Lease, Landlord hereby agrees that Landlord shall not allow the expansion of any Cell Tower Equipment or location of any additional cell tower equipment and/or related equipment on the roof of the Building, except as otherwise provided in the Cell Tower Leases.

25. **Hazardous Materials**.

(a) Compliance with Environmental Laws. During the term of this Lease, Tenant shall comply with all Environmental Laws and Environmental Permits (each as defined in Section 25(h) below) applicable to the operation or use of the Premises, will cause all other persons occupying or using the Premises to comply with all such Environmental Laws and Environmental Permits, will immediately pay or cause to be paid all costs and expenses incurred by reason of such compliance (except as limited by Section 21), and will obtain and renew all Environmental Permits required for operation or use of the Premises.

(b) Restrictions on Use of Hazardous Materials. Tenant shall not generate, use, treat, store, handle, release or dispose of, or permit the generation, use, treatment, storage, handling, release or disposal of Hazardous Materials (as defined in Section 25(h) hereof) on the Premises, or the Complex, or transport or permit the transportation of Hazardous Materials to or from the Premises or the Complex except (i) for limited quantities used or stored at the Premises and required in connection with the routine operation and maintenance of the Premises, and then only upon the written consent of Landlord and in compliance with all applicable Environmental Laws and Environmental Permits, and (ii) as disclosed by Tenant in the Environmental Questionnaire attached as Exhibit I.

(c) Environmental Assessment by Landlord. At any time and from time to time during the Term of this Lease, if Landlord reasonably believes Tenant is violating the terms of this Section 25, Landlord may perform an environmental site assessment report concerning the Premises, prepared by an environmental consulting firm chosen by Landlord, indicating the presence or absence of Hazardous Materials caused or permitted by Tenant and the potential cost of any compliance, removal or remedial action in connection with any such Hazardous Materials on the Premises. Tenant shall grant and hereby grants to Landlord and its agents access to the Premises and specifically grants Landlord an irrevocable non-exclusive license to undertake such an assessment upon reasonable advance notice (which may be oral notice). If such assessment report indicates the presence of Hazardous Materials caused or permitted by Tenant as a result of Tenant's violation of this Section 25, then such report shall be at Tenant's sole cost and expense, and the cost of such assessment shall be immediately due and payable by Tenant to Landlord within thirty (30) days of receipt of an invoice therefor.

(d) Notice to Landlord. Tenant will immediately advise Landlord in writing of any of the following: (1) any pending or threatened in writing Environmental Claim (as defined in Section 25(h) below) against Tenant relating to the Premises or the Complex; (2) any condition or occurrence on the Premises or the Complex that (a) results in noncompliance by Tenant with any applicable Environmental Law, or (b) could reasonably be anticipated to form the basis of an Environmental Claim against Tenant or Landlord or the Premises; (3) any condition or occurrence on the Premises or any property adjoining the Premises that could reasonably be anticipated to cause the Premises to be subject to any restrictions on the ownership, occupancy, use or transferability of the Premises under any Environmental Law; and (4) the actual or anticipated taking of any removal or remedial action by Tenant in response to the actual or alleged presence of any Hazardous Material on the Premises or the Complex. All such notices shall describe in reasonable detail the nature of the claim, investigation, condition, occurrence or removal or remedial action and Tenant's response thereto. In addition, Tenant will provide Landlord with copies of all communications regarding the Premises with any governmental agency relating to Environmental Laws, all such communications with any person relating to Environmental Claims, and such detailed reports of any such Environmental Claim as may reasonably be requested by Landlord.

(e) No Change to Permitted Use. Tenant will not change or permit to be changed the Permitted Use of the Premises unless Tenant shall have notified Landlord thereof in writing and provided Landlord an updated Environmental Questionnaire.

(f) Indemnification. **TENANT AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE INDEMNITEES FROM AND AGAINST ALL OBLIGATIONS (INCLUDING REMOVAL AND REMEDIAL ACTIONS), LOSSES, CLAIMS, SUITS, JUDGMENTS, LIABILITIES, PENALTIES, DAMAGES (INCLUDING CONSEQUENTIAL AND PUNITIVE DAMAGES), COSTS AND EXPENSES (INCLUDING REASONABLE ATTORNEYS' AND CONSULTANTS' FEES AND EXPENSES) OF ANY KIND OR NATURE WHATSOEVER THAT MAY AT ANY TIME BE INCURRED BY, IMPOSED ON OR ASSERTED AGAINST SUCH INDEMNITEES DIRECTLY OR INDIRECTLY BASED ON, OR ARISING OR RESULTING FROM (A) THE ACTUAL OR ALLEGED PRESENCE OF HAZARDOUS MATERIALS ON THE COMPLEX WHICH IS CAUSED OR PERMITTED BY TENANT OR A TENANT PARTY AND (B) ANY ENVIRONMENTAL CLAIM RELATING IN ANY WAY TO TENANT'S OPERATION OR USE OF THE PREMISES (THE "TENANT HAZARDOUS MATERIALS INDEMNIFIED MATTERS"). THE FOREGOING INDEMNITY SHALL NOT INCLUDE ANY HAZARDOUS MATERIALS THAT (X) WERE LOCATED AT THE PREMISES OR THE PROJECT ON THE DELIVERY DATE, (Y) WERE PLACED ON THE PREMISES OR PROJECT BY LANDLORD, ITS EMPLOYEES, AGENTS, OR CONTRACTORS OR ANY THIRD PARTIES NOT UNDER TENANT'S CONTROL, OR (Z) MIGRATED THROUGH AIR, WATER OR SOIL FROM A LOCATION OUTSIDE OF THE PREMISES THROUGH NO ACT, OMISSION OR FAULT OF**

**TENANT OR TENANT PARTY. THE PROVISIONS OF THIS SECTION 25 SHALL SURVIVE THE EXPIRATION OR SOONER TERMINATION OF THIS LEASE.**

To the extent that the undertaking in the preceding paragraphs may be unenforceable because it is violative of any law or public policy, Tenant will contribute the maximum portion that it is permitted to pay and satisfy under applicable Law to the payment and satisfaction of all Tenant Hazardous Materials Indemnified Matters incurred by the Indemnitees.

(g) Payments. All sums paid and costs incurred by Landlord with respect to any Hazardous Materials Indemnified Matter shall be payable within ten (10) days upon written demand.

(h) Definitions. "**Hazardous Materials**" means (i) petroleum or petroleum products, natural or synthetic gas, asbestos in any form that is or could become friable, urea formaldehyde foam insulation, and radon gas; (ii) any substances defined as or included in the definition of "hazardous substances," "hazardous wastes," "hazardous materials," "extremely hazardous wastes," "restricted hazardous wastes," "toxic substances," "toxic pollutants," "contaminants" or "pollutants," or words of similar import, under any applicable Environmental Law; and (iii) any other substance exposure which is regulated by any governmental authority; (b) "**Environmental Law**" means any federal, state or local statute, law, rule, regulation, ordinance, code, policy or rule of common law now or hereafter in effect and in each case as amended, and any judicial or administrative interpretation thereof, including any judicial or administrative order, consent decree or judgment, relating to the environment, health, safety or Hazardous Materials, including without limitation, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601 et seq.; the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 et seq.; the Hazardous Materials Transportation Act, 49 U.S.C. §§ 1801 et seq.; the Clean Water Act, 33 U.S.C. §§ 1251 et seq.; the Toxic Substances Control Act, 15 U.S.C. §§ 2601 et seq.; the Clean Air Act, 42 U.S.C. §§ 7401 et seq.; the Safe Drinking Water Act, 42 U.S.C. §§ 300f et seq.; the Atomic Energy Act, 42 U.S.C. §§ 2011 et seq.; the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. §§ 136 et seq.; the Occupational Safety and Health Act, 29 U.S.C. §§ 651 et seq.; (c) "**Environmental Claims**" means any and all administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of non-compliance or violation, investigations, proceedings, consent orders or consent agreements relating in any way to any Environmental Law or any Environmental Permit, including without limitation (i) any and all Environmental Claims by governmental or regulatory authorities for enforcement, cleanup, removal, response, remedial or other actions or damages pursuant to any applicable Environmental Law and (ii) any and all Environmental Claims by any third party seeking damages, contribution, indemnification, cost recovery, compensation or injunctive relief resulting from Hazardous Materials or arising from alleged injury or threat of injury to health, safety or the environment; (d) "**Environmental Permits**" means all permits, approvals, identification numbers, licenses and other authorizations required under any applicable Environmental Law.

(i) Mold Disclosure. Tenant acknowledges that (i) the Complex consists of property formerly used as a municipal landfill, (ii) methane barriers have been installed beneath the Premises, and (iii) methane levels are monitored throughout the Complex in accordance with the terms of the CC&Rs. The taking of possession of the Premises by Tenant shall be conclusive evidence that Tenant accepts the same "AS-IS" (except as otherwise set forth in this Lease) and that the Premises is suited for the use intended by Tenant and is in good and satisfactory condition at the time such possession was taken.

26. **Miscellaneous**.

(a) **Landlord Transfer**. Landlord may transfer any portion of the Building and any of its rights under this Lease. If Landlord assigns its rights under this Lease, then Landlord shall thereby be released from any further obligations hereunder arising after the date of transfer, provided that the assignee assumes Landlord's obligations hereunder in writing.

(b) **Landlord's Liability**. The liability of Landlord (and its partners, shareholders or members) to Tenant (or any person or entity claiming by, through or under Tenant) for any default by Landlord under the terms of this Lease or any matter relating to or arising out of the occupancy or use of the Premises and/or other areas of the Building or Complex shall be limited to Tenant's actual direct, but not consequential, damages therefor and shall be recoverable only from the interest of Landlord in the Building, and Landlord (and its partners, shareholders or members) shall not be personally liable for any deficiency. Landlord's liability to Tenant shall be further limited to Landlord's equity interest in the Project. **ADDITIONALLY, TO THE EXTENT ALLOWED BY LAW, TENANT HEREBY WAIVES ANY STATUTORY LIEN IT MAY HAVE AGAINST LANDLORD OR ITS ASSETS, INCLUDING WITHOUT LIMITATION, THE BUILDING.**

(c) **Force Majeure**. Other than for Tenant's obligations under this Lease that can be performed by the payment of money (e.g., payment of Rent and maintenance of insurance), whenever a period of time is herein prescribed for action to be taken by either party hereto, such party shall not be liable or responsible for, and there shall be excluded from the computation of any such period of time, any delays due to strikes, riots, acts of God, shortages of labor or materials, war, terrorism, governmental laws, regulations, or restrictions, or any other causes of any kind whatsoever which are beyond the control of such party (each a "**Force Majeure Event**"); provided that in each case, the party seeking the extension of time due to the Force Majeure Event shall have notified the other party of the event or condition giving rise to any such delay within five (5) Business Days after the requesting party learns of the occurrence of the event or condition and thereafter regularly (but in no event less often than weekly) kept the other party apprised of the status. If the party seeking the extension of time due to the Force Majeure Event fails to give notice of an event or condition that otherwise constitutes a Force Majeure Event within five (5) Business Days after it learns of such event or condition or fails to keep the other part regularly apprised of the status of such event or condition, as applicable, then such event or condition shall not constitute a Force Majeure Event hereunder unless and until the requesting party gives a notice that such Force Majeure Event is continuing and specifying the date of onset of the Force Majeure Event, in which event the duration of such Force Majeure Event shall be limited to the period of continuation commencing on the date of such notice of continuation and shall be subject to the continuing obligation that the requesting party thereafter regularly (but no less often than weekly) keeps the other party apprised of the status.

(d) **Brokerage**. Neither Landlord nor Tenant has dealt with any broker or agent in connection with the negotiation or execution of this Lease, other than as set forth in the Basic Lease Information. **EACH PARTY SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS THE OTHER PARTY FROM AND AGAINST ALL COSTS, EXPENSES, ATTORNEYS' FEES, LIENS AND OTHER LIABILITY FOR COMMISSIONS OR OTHER COMPENSATION CLAIMED BY ANY BROKER OR AGENT CLAIMING THE SAME BY, THROUGH, OR UNDER THE INDEMNIFYING PARTY.** The foregoing indemnity shall survive the expiration or earlier termination of the Lease. Landlord shall pay Tenant's broker (set forth in the Basic Lease Information) a commission pursuant to a separate agreement.

(e) **Estoppel Certificates**. From time to time, Tenant shall furnish to any party designated by Landlord, within ten (10) Business Days after Landlord has made a request therefor, a certificate signed by Tenant confirming and containing such factual certifications and representations as to this Lease as Landlord may reasonably request. Unless otherwise required by Landlord's Mortgagee or a prospective purchaser or mortgagee of the Building, the initial form of estoppel certificate to be signed by Tenant is attached hereto as Exhibit G.

(f) **Notices**. All notices and other communications given pursuant to this Lease shall be in writing and shall be: (1) mailed by first class, United States Mail, postage prepaid, certified, with return receipt requested, and addressed to the parties hereto at the address specified in the Basic Lease Information; (2) hand delivered to the intended addressee; (3) sent by a nationally recognized overnight courier service; or (4) sent by facsimile transmission during normal business hours followed by a copy of

such notice sent in another manner permitted hereunder. All notices shall be effective upon the earlier to occur of actual receipt, one (1) Business Day following deposit with a nationally recognized overnight courier service, or three (3) days following deposit in the United States mail. The parties hereto may change their addresses by giving notice thereof to the other in conformity with this provision.

(g) **Separability**. If any clause or provision of this Lease is illegal, invalid, or unenforceable under present or future laws, then the remainder of this Lease shall not be affected thereby and in lieu of such clause or provision, there shall be added as a part of this Lease a clause or provision as similar in terms to such illegal, invalid, or unenforceable clause or provision as may be possible and be legal, valid, and enforceable.

(h) **Amendments; Binding Effect**. This Lease may not be amended except by instrument in writing signed by Landlord and Tenant. No provision of this Lease shall be deemed to have been waived by Landlord unless such waiver is in writing signed by Landlord, and no custom or practice which may evolve between the parties in the administration of the terms hereof shall waive or diminish the right of Landlord to insist upon the performance by Tenant in strict accordance with the terms hereof. The terms and conditions contained in this Lease shall inure to the benefit of and be binding upon the parties hereto, and upon their respective successors in interest and legal representatives, except as otherwise herein expressly provided. This Lease is for the sole benefit of Landlord and Tenant, and, other than Landlord's Mortgagee, no third party shall be deemed a third party beneficiary hereof.

(i) **Quiet Enjoyment**. Provided Tenant has performed all of its obligations hereunder, Tenant shall peaceably and quietly hold and enjoy the Premises for the Term, without hindrance from Landlord or any party claiming by, through, or under Landlord, but not otherwise, subject to the terms and conditions of this Lease.

(j) **No Merger**. There shall be no merger of the leasehold estate hereby created with the fee estate in the Premises or any part thereof if the same person acquires or holds, directly or indirectly, this Lease or any interest in this Lease and the fee estate in the leasehold Premises or any interest in such fee estate.

(k) **No Offer**. The submission of this Lease to Tenant shall not be construed as an offer, and Tenant shall not have any rights under this Lease unless Landlord executes a copy of this Lease and delivers it to Tenant.

(l) **Entire Agreement**. This Lease constitutes the entire agreement between Landlord and Tenant regarding the subject matter hereof and supersedes all oral statements and prior writings relating thereto. Except for those set forth in this Lease, no representations, warranties, or agreements have been made by Landlord or Tenant to the other with respect to this Lease or the obligations of Landlord or Tenant in connection therewith. The normal rule of construction that any ambiguities be resolved against the drafting party shall not apply to the interpretation of this Lease or any exhibits or amendments hereto.

(m) **Waiver of Jury Trial**. **TO THE MAXIMUM EXTENT PERMITTED BY LAW, LANDLORD AND TENANT EACH WAIVE ANY RIGHT TO TRIAL BY JURY IN ANY LITIGATION OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE ARISING OUT OF OR WITH RESPECT TO THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.**

(n) **Governing Law**. This Lease shall be governed by and construed in accordance with the laws of the state in which the Premises are located.

(o) **Recording**. Tenant shall not record this Lease or any memorandum of this Lease without the prior written consent of Landlord, which consent may be withheld or denied in the sole and absolute discretion of Landlord, and any recordation by Tenant shall be a material breach of this Lease.

Tenant grants to Landlord a power of attorney to execute and record a release releasing any such recorded instrument of record that was recorded without the prior written consent of Landlord, which power of attorney is coupled with an interest and is non-revocable during the Term.

(p) **Joint and Several Liability**. If Tenant is comprised of more than one (1) party, each such party shall be jointly and severally liable for Tenant's obligations under this Lease. All unperformed obligations of Tenant hereunder not fully performed at the end of the Term shall survive the end of the Term, including payment obligations with respect to Rent and all obligations concerning the condition and repair of the Premises.

(q) **Financial Reports**. Within thirty (30) days after Landlord's request, Tenant will furnish Tenant's most recent audited financial statements (including any notes to them) to Landlord, or, if no such audited statements have been prepared, such other financial statements (and notes to them) as may have been prepared by an independent certified public accountant or, failing those, Tenant's internally prepared financial statements. If Tenant is a publicly traded corporation, Tenant may satisfy its obligations hereunder by providing to Landlord Tenant's most recent annual and quarterly reports. Landlord will not disclose any aspect of Tenant's financial statements that Tenant designates to Landlord as confidential except: (1) to Landlord's Mortgagee or prospective mortgagees or purchasers of the Building; (2) in litigation between Landlord and Tenant; and (3) if required by court order. Tenant shall not be required to deliver the financial statements required under this Section 26(q) more than once in any twelve (12) month period unless requested by Landlord's Mortgagee or a prospective buyer or lender of the Building or a Default occurs.

(r) **Landlord's Fees**. Whenever Tenant requests Landlord to take any action not required of it hereunder or give any consent required or permitted under this Lease, Tenant will reimburse Landlord for Landlord's reasonable, out-of-pocket costs payable to third parties and incurred by Landlord in reviewing the proposed action or consent, including reasonable attorneys', engineers' or architects' fees, within thirty (30) days after Landlord's delivery to Tenant of a statement of such costs (other than in connection with Alterations and Transfers, for which have been paid for by Tenant as specifically set forth in this Lease). Tenant will be obligated to make such reimbursement without regard to whether Landlord consents to any such proposed action.

(s) **Telecommunications**. All providers of Telecommunications Services shall be required to comply with the Rules and Regulations of the Building and applicable Laws. Tenant acknowledges that Landlord shall not be required to provide or arrange for any Telecommunications Services and that Landlord shall have no liability to any Tenant Party in connection with the installation, operation or maintenance of Telecommunications Services or any equipment or facilities relating thereto. Tenant, at its cost and for its own account, shall be solely responsible for obtaining all Telecommunications Services. For the purposes of this provision, "**Telecommunication Services**" shall mean telecommunications systems, including voice, video, data, Internet, and any other services provided over wire, fiber optic, microwave, wireless, and any other transmission systems.

Notwithstanding the foregoing to the contrary, if Tenant requires the installation of one or more satellite dishes or other data transmission equipment on the roof of the Building (collectively, the "**Telecommunications Equipment**"), then upon thirty (30) days advance written notice to Landlord and subject to available capacity and Tenant's compliance with all applicable Laws and Landlord's reasonable requirements for property and roof maintenance and repair, Tenant may place such Telecommunications Equipment on the roof of the Premises in a location reasonably approved by Landlord. The installation of the Telecommunications Equipment shall constitute an Alteration and shall be performed in accordance with and subject to the provisions of Article 8 of this Lease, and the Telecommunications Equipment shall be treated for all purposes of the Lease as if the same were Tenant's property. The cost of the Telecommunications Equipment and all costs of installing, maintaining and removing the Telecommunications Equipment shall be borne solely by Tenant. Upon the expiration of the Term or upon

any earlier termination of the Lease, Tenant shall, at Tenant's sole cost and expense and subject to the reasonable direction from Landlord, remove the Telecommunications Equipment, repair any damage caused thereby to the condition existing prior to the installation of the Telecommunications Equipment, reasonable wear and tear excepted.

(t) **Confidentiality**. Tenant acknowledges that the terms and conditions of this Lease are to remain confidential for Landlord's benefit, and may not be disclosed by Tenant to anyone, by any manner or means, directly or indirectly (except to Tenant's attorneys and accountants which have been informed of the confidentiality provisions of this Lease and further except as Tenant shall be required under applicable laws including requirements of the Securities and Exchange Commission) without Landlord's prior written consent. The consent by Landlord to any disclosures shall not be deemed to be a waiver on the part of Landlord of any prohibition against any future disclosure.

(u) **Authority**. Each of Landlord and Tenant (if a corporation, partnership or other business entity) hereby represents and warrants to the other party that it is a duly formed and existing entity qualified to do business in the state in which the Premises are located, that it has full right and authority to execute and deliver this Lease, and that each person signing on behalf of itself is authorized to do so.

(v) **Waiver**. **LANDLORD AND TENANT EXPRESSLY DISCLAIM ANY IMPLIED WARRANTY THAT THE PREMISES ARE SUITABLE FOR TENANT'S INTENDED COMMERCIAL PURPOSE, AND TENANT'S OBLIGATION TO PAY RENT HEREUNDER IS NOT DEPENDENT UPON THE CONDITION OF THE PREMISES OR THE PERFORMANCE BY LANDLORD OF ITS OBLIGATIONS HEREUNDER, AND, EXCEPT AS OTHERWISE EXPRESSLY PROVIDED HEREIN, TENANT SHALL CONTINUE TO PAY THE RENT, WITHOUT ABATEMENT, DEMAND, SETOFF OR DEDUCTION, NOTWITHSTANDING ANY BREACH BY LANDLORD OF ITS DUTIES OR OBLIGATIONS HEREUNDER, WHETHER EXPRESS OR IMPLIED. TO THE EXTENT ALLOWED BY LAW, TENANT WAIVES THE BENEFIT OF ANY CONSUMER PROTECTION LAWS.**

(w) **Tenant Representation**. Tenant is not a person or entity described by Sec. 1 of the Executive Order (No. 13,224) Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism, 66 Fed. Reg. 49,079 (Sept. 24, 2001), and does not engage in any dealings or transactions, and is not otherwise associated, with any such persons or entities.

(x) **Transportation Management**. Tenant shall fully comply with all present or future programs intended to manage parking, transportation or traffic in and around the Complex, and in connection therewith, Tenant shall take responsible action for the transportation planning and management of all employees located at the Premises by working directly with Landlord, any governmental transportation management organization or any other transportation-related committees or entities.

(y) **CC&Rs; Disclosure**. Tenant acknowledges that this Lease is subject to (i) that certain Declaration of Covenants, Conditions and Restrictions for Koll Center Sierra Point, dated October 9, 1984, and recorded on October 17, 1984 as Instrument No. 84112690 in the Official Records of San Mateo County, California (as the same has been and may be amended), and (ii) that certain Declaration of Covenants, Conditions and Environmental Restrictions Relating to Environmental Compliance for Sierra Point, dated October 21, 1998 and recorded on October 23, 1998 as Instrument No. 98-172219 in the Official Records of San Mateo County, California (as the same has been and may be amended) (collectively, the "**CC&Rs**").

(z) **Disclosure**. For purposes of Section 1938(a) of the California Civil Code, Landlord hereby discloses to Tenant, and Tenant hereby acknowledges, that neither the Complex nor the Premises has undergone inspection by a Certified Access Specialist (CASp) (defined by California Civil Code Section 55.52). Pursuant to California Civil Code Section 1938, Tenant is hereby notified that a CASp can inspect the Premises and determine whether the Premises complies with all of the applicable

construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the Premises, Landlord may not prohibit Tenant from obtaining a CASp inspection of the Premises for the occupancy of the Tenant, if requested by Tenant. Landlord and Tenant shall mutually agree on the arrangements for the time and manner of any CASp inspection, the payment of the fee for the CASp inspection and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the Premises.

**[SIGNATURES ON FOLLOWING PAGE]**

This Lease is executed on the respective dates set forth below, but for reference purposes, this Lease shall be dated as of the date first above written. If the execution date is left blank, this Lease shall be deemed executed as of the date first written above.

**LANDLORD:**

MARINA BOULEVARD PROPERTY, LLC,
a Delaware limited liability company

By: /s/ Sean Armstrong
Printed Name: Sean Armstrong
Title: Authorized Signer

By: /s/ Peter Aronson
Printed Name: Peter Aronson
Title: Authorized Signer

Execution Date: November 3, 2017

**TENANT:**

SANGAMO THERAPEUTICS, INC.,
a Delaware corporation

By: /s/ Sandy Macrae
Printed Name: Sandy Macrae
Title: President and Chief Executive Officer

Execution Date: November 3, 2017

**EXHIBIT A-1**

**SITE PLAN DEPICTING PREMISES AND BUILDING**

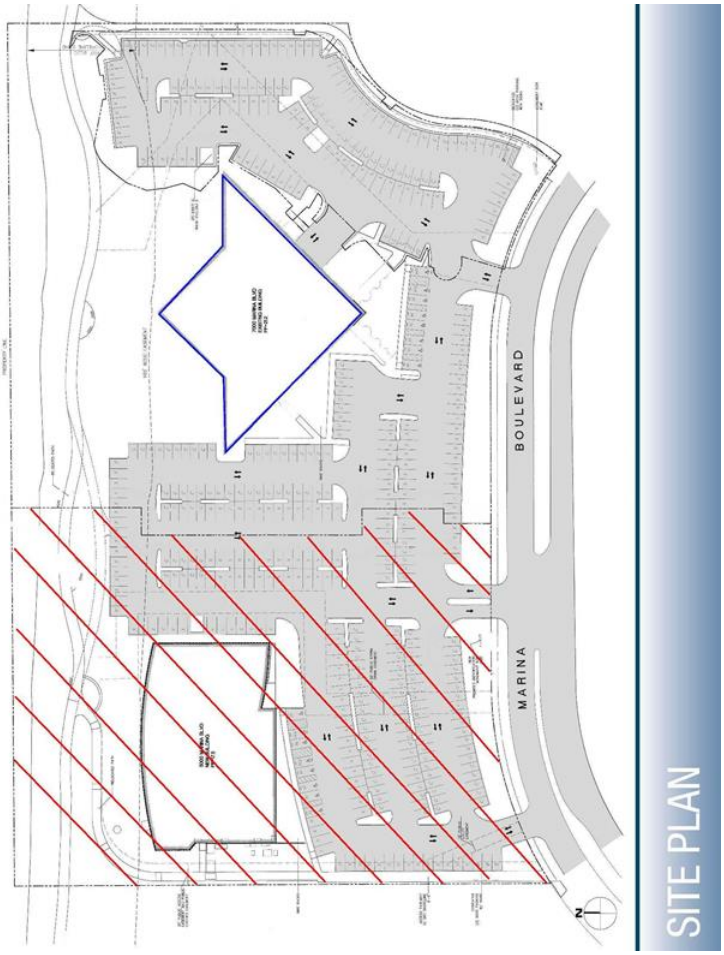

**EXHIBIT A-2**

**SITE PLAN DEPICTING COMPLEX**


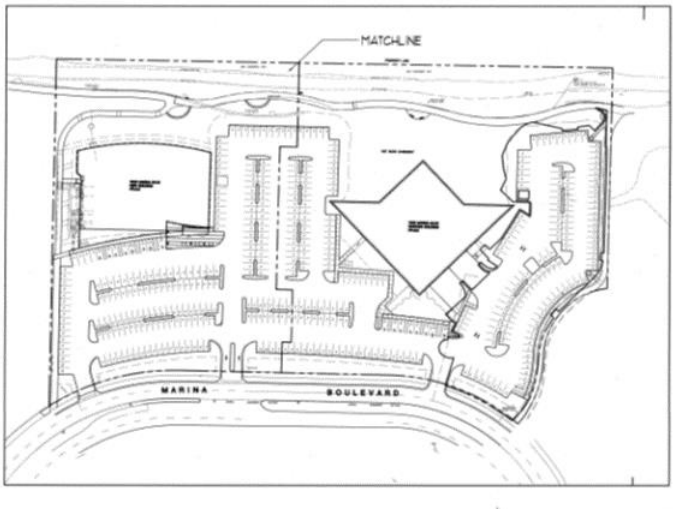

**EXHIBIT B**

**LEGAL DESCRIPTION OF THE LAND**

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF BRISBANE, IN THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

Parcel One:

Parcel A as shown on that certain map entitled “Parcel Map, Lands of Foster Enterprises, a General Partnership” filed for record in the Office of the Recorder of the County of Sank Mateo, State of California on November 6, 2000 in Book 73 of Parcel Maps at page 27.

Excepting all minerals and all mineral rights of every kind and character now known to exist or hereafter discovered, including without limiting the generality of the foregoing, oil and gas and rights thereto, together with the sole, exclusive, and perpetual right to explore for, remove and dispose of said minerals by any means or methods suitable to the grantor, its successors and assigns including lateral or slant drilling, but without entering upon to using the surface of the lands hereby conveyed, and in such manner as not to damage the surface of said lands or any building located thereon or hereafter erected thereon or the substructure of any such building, or to interfere with the use thereof by the grantee, its successors or assigns, as excepted in the following Deeds to Utah Constructing & Mining Co., a Corporation, predecessor in interest to the vestees herein:

A. From Marie Louise Philips, dated August 20, 1959 and recorded September 14, 1959, Instrument no. 86272-R, in Book 3670 of Official Records at page 624.

B. From John F. Wilcox, dated August 27, 1959 and recorded September 14, 1959, Instrument no. 86273-R, in Book 3670 of Official Records at page 625.

C. From Marita Clark, dated August 20, 1959 and recorded September 14, 1959, Instrument no. 86274-R in Book 3670 of Official Records at page 626.

APN: 007-165-110

Parcel Two:

Parcel B as shown on that certain map entitled “Parcel Map, Lands of Foster Enterprises, a General Partnership” filed for record in the Office of the Recorder of the County of Sank Mateo, State of California on November 6, 2000 in Book 73 of Parcel Maps at page 27.

Excepting all minerals and all mineral rights of every kind and character now known to exist or hereafter discovered, including without limiting the generality of the foregoing, oil and gas and rights thereto, together with the sole, exclusive, and perpetual right to explore for, remove and dispose of said minerals by any means or methods suitable to the grantor, its successors and assigns including lateral or slant drilling, but without entering upon or using the surface of the lands hereby conveyed, and in such manner as not to damage the surface of said lands or any building located thereon or hereafter erected thereon or the substructure of any such building, or to interfere with the use thereof by the grantee, its successors or assigns, as excepted in the following Deeds to Utah Constructing & Mining Co., a Corporation, predecessor in interest to the vestees herein:

A. From Marie Louise Philips, dated August 20, 1959 and recorded September 14, 1959, Instrument no. 86272-R, in Book 3670 of Official Records at page 624.

B. From John F. Wilcox, dated August 27, 1959 and recorded September 14, 1959, Instrument no. 86273-R, in Book 3670 of Official Records at page 625.

C. From Marita Clark, dated August 20, 1959 and recorded September 14, 1959, Instrument no. 86274-R in Book 3670 of Official Records at page 626.

APN: 007-165-120

APN: 007-165-110, 007-165-120

EXHIBIT B-2

**EXHIBIT C**

**ADDITIONAL RENT, TAXES, AND INSURANCE**

1. **Additional Rent**. Tenant shall pay to Landlord all costs (100%) of Common Area Maintenance Costs, Taxes, and Insurance for the Building, and Tenant's Proportionate Share of the annual Common Area Maintenance Costs (defined below) in the Complex ("**Additional Rent**"). The estimated projected monthly Additional Rent for 2017 is $0.85 per rentable square feet, it being agreed and acknowledged by Tenant that this is only an estimate of the projected Additional Rent for the Complex, is not binding on Landlord and that the actual Additional Rent may be in excess of such estimate. Landlord may make a good faith estimate of the Additional Rent to be due by Tenant for any calendar year or part thereof during the Term and provide such estimate to Tenant. During each calendar year or partial calendar year of the Term, Tenant shall pay to Landlord, in advance concurrently with each monthly installment of Base Rent, an amount equal to the estimated Additional Rent for such calendar year or part thereof divided by the number of months therein. From time to time, Landlord may estimate and re-estimate the Additional Rent to be due by Tenant and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Additional Rent payable by Tenant shall be appropriately adjusted in accordance with the estimations so that, by the end of the calendar year in question, Tenant shall have paid all of the Additional Rent as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when actual Common Area Maintenance Costs are available for each calendar year.

2. **Common Area Maintenance Costs**. The term "**Common Area Maintenance Costs**" shall mean all expenses and disbursements (subject to the limitations set forth below) that Landlord incurs in connection with the ownership, operation, and maintenance of the Project or Complex, as applicable, determined in accordance with sound accounting principles consistently applied, including the following costs: (a) wages and salaries of all on-site employees at or below the grade of senior building manager engaged in the operation, maintenance, repair or security of the Project or Complex, as applicable (together with Landlord's reasonable allocation of expenses of off-site employees at or below the grade of senior building manager who perform a portion of their services in connection with the operation, maintenance or security of the Project or Complex, as applicable), including taxes, insurance and benefits relating thereto; (b) all supplies and materials used in the operation, maintenance, repair, replacement, and security of the Project or Complex, as applicable; (c) costs for improvements made to the Project or Complex, as applicable which, although capital in nature, all as amortized over the Useful Life of such capital improvement item at an interest rate equal to the "prime rate" as announced from time to time by Bank of America, N.A., plus one percent (1%) per annum are (i) expected to reduce the normal Common Area Maintenance Costs (including all utility costs) of the Project or Complex, taking into consideration the anticipated cost savings, as determined by Landlord using its good faith, commercially reasonable judgment, as well as (ii) capital improvements made in order to comply with any applicable Law hereafter promulgated by any governmental authority or any interpretation hereafter rendered with respect to any existing Law, as well as (iii) capital improvements made to improve the health, safety and welfare of the Building and its occupants; (d) cost of all utilities used in the Common Areas; (e) repairs, replacements, and general maintenance of the Project or Complex, including common area maintenance fees charged by an owner's association and reasonable market-rate property management fees charged by Owner's property manager or by Owner, as applicable (which management fee shall not exceed three percent (3%) of gross revenues generated by the Project or Complex); (f) fair market rental for a commercially reasonable amount of space with respect to the management office for the Building or Complex, if any; (g) service, maintenance and management contracts with independent contractors for the operation, maintenance, management, repair, replacement, or security of the Project or Complex, as applicable, including the Common Areas; and (h) payments under any easement, license, operating agreement, declaration, restrictive covenant, or instrument now or hereafter affecting the Complex, including, without limitation, the Declaration of Covenants, Conditions and Restrictions for Koll Center Sierra Point, dated October 9, 1984, and recorded

on October 17, 1984 as Instrument No. 84112690 in the Official Records of San Mateo County, California (as the same has been and may be amended), and the Declaration of Covenants, Conditions and Environmental Restrictions Relating to Environmental Compliance for Sierra Point, dated October 21, 1998 and recorded on October 23, 1998 as Instrument No. 98-172219 in the Official Records of San Mateo County, California (as the same has been and may be amended). If the Building is part of a Complex, Common Area Maintenance Costs may be prorated among the Project and the other buildings of the Complex, as reasonably and equitably determined by Landlord.

Common Area Maintenance Costs shall not include costs for: (1) repair, replacements and general maintenance paid by proceeds of insurance or by Tenant or other third parties; (2) interest, amortization or other payments on loans to Landlord including principal, fees and penalties; (3) depreciation; (4) leasing commissions; (5) legal expenses; (6) renovating or otherwise improving space for leased premises of the Project or Complex, as applicable or vacant space in the Project or Complex, as applicable; (7) Taxes and Insurance which are paid separately pursuant to Sections 3 and 4 below; (8) any net income, franchise, capital stock, estate or inheritance taxes, federal income taxes imposed on or measured by the income of Landlord from the operation of the Project or Complex, as applicable or taxes that are the personal obligation of Tenant or of another tenant of the Project or Complex, as applicable; (9) capital improvements made to the Project or Complex, as applicable, other than capital improvements described in Section 2 of this Exhibit and except for items which are generally considered maintenance and repair items, such as painting of Common Areas, and the like; (10) expenses of initial development and construction, including grading, paving, landscaping and decorating (as distinguished from maintenance, repair and replacement of the foregoing) and the cost of correcting defects in the construction of the Building or in the Building's Systems; (11) salaries of officers and executives of Landlord; (12) the cost of any work or service performed for any tenant of the Building (other than Tenant) to a materially greater extent or in a materially more favorable manner than that furnished generally to the tenants and other occupants (including Tenant); (13) all costs of cleanup, removal, investigation and/or remediation (collectively, "Remediation Costs") of any Hazardous Substances in, on or under the Project and/or the Complex, as applicable, the extent such Hazardous Substances are (x) in existence as of the Delivery Date and in violation of applicable Laws, or (y) introduced onto the Project and/or the Complex, as applicable, after the Delivery Date by Landlord or any of Landlord's agents, employees, contractors or tenants or other third parties not related to Tenant in violation of applicable Laws; (14) the cost of any repairs, alterations, additions, changes, replacements and other items which are made in order to prepare for a new tenant's occupancy; (15) any advertising expenses; (16) any costs included in Common Area Maintenance Costs representing an amount paid to a corporation related to Landlord which is in excess of the amount which would have been paid in the absence of such relationship; (17) interest and penalties due to late payment of any amounts owed by Landlord, except such as may be incurred as a result of Tenant's failure to timely pay its portion of such amounts or as a result of Landlord's contesting such amounts in good faith; (18) costs related to the existence and maintenance of Landlord as a legal entity including professional fees, except to the extent attributable to the operation and management of the Project or Complex, as applicable; (19) the cost of any work or service performed for any tenant (including Tenant) at such tenant's cost; (20) costs incurred to remedy violations of applicable Laws in the Common Areas or Premises to the extent such violations existed prior to the Delivery Date; (21) costs of repairs to the extent reimbursed by payment of insurance proceeds received by Landlord; (22) costs or expenses incurred in connection with the financing or sale of the Project or any portion thereof (it being the intent of the parties hereto that Tenant's obligation to pay Taxes shall be covered by the terms and conditions hereinafter set forth in Section 3 of this Exhibit C and that Taxes shall include all taxes, assessments and governmental charges in connection with Proposition 13, as hereinafter defined in Section 3 of this Exhibit C); (23) costs expressly excluded from Common Area Maintenance Costs elsewhere in this Lease or that are charged to or paid by Tenant under other provisions of this Lease; (23) any cost incurred in connection with Cell Tower Equipment (including, without limitation, installation of meters and utilities used by Cell Tower Equipment); and (25) any item that, if included in Common Area Maintenance Costs, would involve a double collection for such item by Landlord.

3. **Taxes**. Tenant shall pay all Taxes for the Building, and Tenant's Proportionate Share of Taxes for the Complex for each year and partial year falling within the Term. Tenant shall pay Tenant's Proportionate Share of Taxes in the same manner as provided above for Tenant's Proportionate Share of Common Area Maintenance Costs. "**Taxes**" shall mean taxes, assessments, and governmental charges or fees whether federal, state, county or municipal, and whether they be by taxing districts or authorities presently taxing or by others, subsequently created or otherwise, and any other taxes and assessments (including non-governmental assessments for common charges under a restrictive covenant or other private agreement that are not treated as part of Common Area Maintenance Costs) now or hereafter attributable to the Project or Complex, as applicable (or its operation), excluding, however, penalties and interest thereon and federal and state taxes on income (if the present method of taxation changes so that in lieu of or in addition to the whole or any part of any Taxes, there is levied on Landlord a capital tax directly on the rents received therefrom or a franchise tax, assessment, or charge based, in whole or in part, upon such rents for the Project or Complex, as applicable, then all such taxes, assessments, or charges, or the part thereof so based, shall be deemed to be included within the term "Taxes" for purposes hereof). Taxes shall include the costs of consultants retained in an effort to lower taxes and all costs incurred in disputing any taxes or in seeking to lower the tax valuation of the Project. Taxes shall also include any assessment, tax, fee, levy or charge in addition to, or in substitution, partially or totally, of any assessment, tax, fee, levy or charge previously included within the definition of real property tax, it being acknowledged by Tenant and Landlord that Proposition 13 was adopted by the voters of the State of California in the June 1978 election ("**Proposition 13**") and that assessments, taxes, fees, levies and charges may be imposed by governmental agencies for such services as fire protection, street, sidewalk and road maintenance, conservation, refuse removal and for other governmental services formerly provided without charge to property owners or occupants, and, in further recognition of the decrease in the level and quality of governmental services and amenities as a result of Proposition 13, Taxes shall also include any governmental or private assessments or the Building's or Complex's contribution towards a governmental or private cost-sharing agreement for the purpose of augmenting or improving the quality of services and amenities normally provided by governmental agencies. It is the intention of Tenant and Landlord that all such new and increased assessments, taxes, fees, levies, and charges and all similar assessments, taxes, fees, levies and charges be included within the definition of Taxes for purposes of this Lease. **FOR PROPERTY TAX PURPOSES, TO THE EXTENT ALLOWED BY LAW, TENANT WAIVES ALL RIGHTS TO PROTEST OR APPEAL THE APPRAISED VALUE OF THE PREMISES, AS WELL AS THE PROJECT AND COMPLEX, AND ALL RIGHTS TO RECEIVE NOTICES OF REAPPRAISEMENT.** Tenant shall reimburse Landlord, as Additional Rent, upon demand for any and all taxes required to be paid by Landlord (except to the extent included in Taxes for the Complex by Landlord), excluding state, local and federal personal or corporate income taxes measured by the net income of Landlord from all sources, capital stock, franchise and estate and inheritance taxes, whether or not now customary or within the contemplation of the parties hereto, when: (a) said taxes are measured by or reasonably attributable to the cost or value of Tenant's equipment, furniture, fixtures and other personal property located in the Premises, or by the cost or value of any leasehold improvements made in or to the Premises by or for Tenant, including the Tenant Improvements, to the extent the cost or value of such leasehold improvements exceeds the cost or value of a building standard build out as determined by Landlord regardless of whether title to such improvements shall be vested in Tenant or Landlord; (b) said taxes are assessed upon or with respect to the possession, leasing, operation, management, maintenance, alteration, repair, use or occupancy by Tenant of the Premises or any portion of the Complex used by Tenant in connection with this Lease; or (c) said taxes are assessed upon this transaction or any document to which Tenant is a party creating or transferring an interest or an estate in the Premises.

4. **Insurance**. Tenant shall pay all Insurance for the Building, and Tenant's Proportionate Share of Insurance for the Complex for each year and partial year falling within the Term. Tenant shall pay Tenant's Proportionate Share of Insurance in the same manner as provided above for Tenant's Proportionate Share of Common Area Maintenance Costs. "**Insurance**" shall mean property, liability and

other insurance coverages carried by Landlord, including without limitation deductibles and risk retention programs and an allocation of a portion of the cost of blanket insurance policies maintained by Landlord and/or its affiliates, provided that such insurance deductibles or premiums shall not be in excess of that incurred by comparable landlords for comparable buildings in the Project's market area.

5. **Common Area Maintenance, Tax and Insurance Statement**. By May 1 of each calendar year, or as soon thereafter as practicable, Landlord shall furnish to Tenant a statement of Common Area Maintenance Costs, Taxes, and Insurance for the Building and the Complex for the previous year, adjusted as provided in Section 6 of this Exhibit (the "**Common Area Maintenance, Tax and Insurance Statement**"). If Tenant's estimated payments of Common Area Maintenance or Taxes or Insurance for the Building and the Complex under this Exhibit C for the year covered by the Common Area Maintenance Costs, Tax and Insurance Statement exceed Tenant's share of such items as indicated in the Common Area Maintenance, Tax and Insurance Statement, then Landlord shall promptly credit or reimburse Tenant for such excess; likewise, if Tenant's estimated payments of Common Area Maintenance, Taxes and Insurance under this Exhibit C for such year are less than Tenant's share of such items as indicated in the Common Area Maintenance, Tax and Insurance Statement, then Tenant shall promptly pay Landlord such deficiency, notwithstanding that the Term has expired and Tenant has vacated the Premises.

6. **Gross-Up**. With respect to any calendar year or partial calendar year in which the Complex is not occupied to the extent of 95% of the rentable area thereof, or Landlord is not supplying services to 95% of the rentable area thereof, the portion of Common Area Maintenance Costs for the Complex for such period which vary by occupancy shall, for the purposes hereof, be increased to the amount which would have been incurred had the Complex been occupied to the extent of 95% of the rentable area thereof and Landlord had been supplying services to 95% of the rentable area thereof.

7. **Tenant's Audit Right**. Upon Tenant's written request given not more than ninety (90) days after Tenant's receipt of the Common Area Maintenance, Tax and Insurance Statement, Landlord shall furnish Tenant with such reasonable supporting documentation in connection with said Common Area Maintenance Costs, Taxes and Insurance as Tenant may reasonably request. Landlord shall provide said information to Tenant within thirty (30) days after Tenant's written request therefor. Within ninety (90) days after receipt of the Common Area Maintenance, Tax and Insurance Statement by Tenant (the "**Review Period**"), if Tenant disputes the amount of Additional Rent set forth in the Common Area Maintenance, Tax and Insurance Statement, an independent certified public accountant (which accountant (A) is a member of a nationally or regionally recognized accounting firm which has previous experience in reviewing financial operating records of landlords of comparable buildings, (B) shall not have provided primary accounting and/or lease administration services to Tenant in the past three (3) years, and (C) is not working on a contingency fee basis) designated and paid for by Tenant, may, after reasonable notice to Landlord and at reasonable times, inspect Landlord's records with respect to the Common Area Maintenance, Tax and Insurance Statement at Landlord's corporate offices, provided that Tenant is not in default under the Lease (subject to the applicable notice and cure periods). In connection with such inspection, Tenant and Tenant's agents must agree in advance to abide by Landlord's reasonable rules and procedures regarding such inspection, and shall execute a commercially reasonable confidentiality agreement regarding such inspection. Such inspection shall be completed in a timely manner but no later than thirty (30) days after the date Tenant's accountant commences such inspection. Any audit report prepared by Tenant's auditors shall be delivered concurrently to Landlord and Tenant within such thirty (30) day period. Tenant's failure to dispute the amount of Additional Rent set forth in any Common Area Maintenance, Tax and Insurance Statement within the Review Period shall be deemed to be Tenant's approval of such statement and Tenant, thereafter, waives the right or ability to dispute the amounts set forth in such statement. If after such inspection, Tenant still disputes such Additional Rent, a determination as to the proper amount may be made, at Tenant's option and expense, by an independent certified public accountant who (x) is a member of a nationally or regionally recognized accounting firm which has previous experience in reviewing financial operating records of landlords of comparable buildings, (y) is not working

on a contingency fee basis and (z) shall be mutually selected by Landlord and Tenant (the "**Accountant**"); provided that if such determination by the Accountant proves that Additional Rent for the applicable Expense Year were overstated by more than five percent (5%), then the cost of the Accountant and the cost of such determination shall be paid for by Landlord. In addition, if such audit reveals that Landlord has over-charged Tenant, then within thirty (30) days after the results of such audit are made available to Landlord, Landlord shall reimburse to Tenant the amount of such over-charge. If the audit reveals that the Tenant was under-charged, then within thirty (30) days after the results of such audit are made available to Tenant, Tenant shall reimburse to Landlord the amount of such under-charge. Tenant agrees that this Section 7 shall be the sole method to be used by Tenant to dispute the amount of any Common Area Maintenance Costs, Taxes and Insurance payable or not payable by Tenant pursuant to the terms of the Lease, and Tenant hereby waives any other rights at law or in equity relating thereto.

**EXHIBIT D**

**TENANT WORK LETTER**

This Work Letter (this "**Work Letter**") shall set forth the terms and conditions relating to the construction of Tenant Improvements (as defined hereinafter) on the Premises. All references in this Work Letter to the "**Lease**" shall mean the relevant portions of the Lease to which this Work Letter is attached as Exhibit D.

**SECTION 1**

**BASE, SHELL AND CORE**

Tenant hereby accepts the base, shell and core (i) of the Premises and (ii) of the floor(s) of the Building on which the Premises are located (collectively, the "**Base, Shell and Core**"), in its current "AS IS" condition (except as otherwise expressly set forth in this Lease) existing as of the date of the Lease and the Commencement Date. Except for the Tenant Improvement Allowance, the Additional Tenant Improvement Allowance, the Roof Allowance and the HVAC Allowance set forth below, Landlord shall not be obligated to make or pay for any alterations or improvements to the Premises, the Building or the Complex except as otherwise expressly set forth in the Lease.

**SECTION 2**

**TENANT IMPROVEMENTS**

**2.1** **Tenant Improvement Allowance**. Tenant shall be entitled to a one time tenant improvement allowance (the "**Tenant Improvement Allowance**") in the amount of up to, but not exceeding Sixty Dollars ($60.00) per rentable square foot of the Premises (i.e., up to Five Million Two Hundred Sixty-One Thousand Seven Hundred Dollars ($5,261,700.00), for the costs relating to the initial design and construction of Tenant's Improvements (as hereinafter defined) which will be permanently affixed to the Premises. The "**Tenant Improvements**" shall mean the scope of such work as set forth in the Approved Working Drawings (as defined in Section 3.4 below); provided, however, that Landlord shall have no obligation to disburse (a) all or any portion of the Tenant Improvement Allowance (or the Additional Tenant Improvement Allowance, as such term is defined below) to Tenant unless Tenant makes a request for disbursement pursuant to the terms and conditions of Section 2.2 below prior to that date which is nine (9) months after the Commencement Date, or (b) all or any portion of the HVAC Allowance or the Roof Allowance (as such terms are defined below) to Tenant unless Tenant makes a request for disbursement pursuant to the terms and conditions of Section 2.2.3 below prior to that date which is nine (9) months after the Commencement Date. In no event shall Landlord be obligated to make disbursements pursuant to this Work Letter in a total amount which exceeds the Tenant Improvement Allowance, the Additional Tenant Improvement Allowance, the Roof Allowance and the HVAC Allowance. Tenant shall not be entitled to receive any cash payment or credit against Rent or otherwise for any unused portion of the Tenant Improvement Allowance (or the Additional Tenant Improvement Allowance) which is not used to pay for the Tenant Improvement Allowance Items (as such term is defined below).

**2.1.1** Concurrent with Tenant's execution of this Lease, Tenant shall deposit with an escrow company ("**Escrowee**") mutually selected by Landlord and Tenant an amount equal to One Hundred Dollars ($100.00) per rentable square foot of the Premises (i.e., Eight Million Seven Hundred Sixty-Nine Thousand Five Hundred Dollars ($8,769,500.00) ("**Tenant Contribution**") toward the cost of the Tenant Improvements Allowance Items (as hereinafter defined). Tenant must fulfill the terms and conditions of an "**Escrow Agreement**" to be entered into by and among Landlord, Tenant and Escrowee in order to

receive any disbursements of the Tenant Contribution which shall be made pursuant to the Escrow Agreement. The form of the Escrow Agreement is attached hereto as Exhibit N and made a part hereof.

Following (i) disbursement of the full amount of the Tenant Improvement Allowance pursuant to the terms set forth in Section 2.2 below, and (ii) the disbursement of the Tenant Contribution pursuant to the terms of the Escrow Agreement, and provided that Tenant is faithfully complying with all terms of the Lease, Tenant may, upon written notice to Landlord, elect to amortize an additional tenant improvement allowance in the amount up to, but not exceeding, Eighty-Five Dollars ($85.00) per rentable square foot of the Premises (*i.e.*, up to Seven Million Four Hundred Fifty-Four Thousand and Seventy-Five Dollars ($7,454,075)) for additional costs of the Tenant Improvements (the "**Additional Tenant Improvement Allowance**"), as additional Base Rent to be paid by Tenant to Landlord, which shall be amortized on a straight-line basis over the initial Term of the Lease, together with interest at a rate of eight percent (8%) per annum, and which shall be paid by Tenant to Landlord concurrently with monthly Base Rent as set forth in Section 4(a) of the Lease. Disbursement of the Additional Tenant Improvement Allowance shall be pursuant to the procedures set forth in Section 2.2 below and subject to all other terms of this Tenant Work Letter. Landlord shall send to Tenant a confirmation of the amount of Additional Tenant Improvement Allowance elected to be used by Tenant and the modified Base Rent schedule as a result thereof, which confirmation Tenant shall acknowledge by executing a copy of the confirmation and returning it to Landlord. If Landlord fails to sign and return the confirmation to Landlord within ten (10) days of receipt thereof from Landlord, the confirmation as sent by Landlord shall be deemed to have correctly set forth the modified Base Rent schedule. Failure of Landlord to send such confirmation shall have no effect on the modified Base Rent schedule.

**2.1.2** In addition to the Tenant Improvement Allowance, Tenant shall be entitled to a one-time HVAC allowance (the "**HVAC Allowance**") in the amount of up to, but not exceeding $1,005,095.00, for the costs exclusively relating to Tenant's purchase and installation of HVAC equipment within the Premises ("**HVAC Work**"). Disbursement of the HVAC Allowance shall be pursuant to the procedures set forth in Section 2.2.3 below and subject to all other terms of this Tenant Work Letter. Tenant shall not be entitled to receive any cash payment or credit against Rent or otherwise for any unused portion of the HVAC Allowance.

**2.1.3** In addition to the foregoing, Tenant shall be entitled to a one-time roof allowance (the "**Roof Allowance**") in the amount of $250,000.00 for the costs exclusively relating to Tenant's repair of the roof of the Building ("**Roof Work**"). Disbursement of the Roof Allowance shall be pursuant to the procedures set forth in Section 2.2.3 below and subject to all other terms of this Tenant Work Letter. Tenant shall not be entitled to receive any cash payment or credit against Rent or otherwise for any unused portion of the Roof Allowance.

**2.2** **Disbursement of the Tenant Improvement Allowance**.

**2.2.1** Tenant Improvement Allowance Items. Except as otherwise set forth in this Work Letter, the Tenant Improvement Allowance shall be disbursed by Landlord only for the following items and costs (collectively, the "**Tenant Improvement Allowance Items**"):

**2.2.1.1** payment of the fees of the "**Architect**" and the "**Engineers**", as those terms are defined in Section 3.1 of this Work Letter, and payment of the fees incurred by, and the cost of documents and materials supplied by, Landlord and Landlord's consultants in connection with the preparation and review of the "**Construction Drawings**", as that term is defined in Section 3.1 of this Work Letter;

**2.2.1.2** the payment of plan check, permit and license fees relating to construction of the Tenant Improvements;

**2.2.1.3** the cost of construction of the Tenant Improvements, including, without limitation, costs and expense for labor, material, equipment and fixtures, contractors' fees and general conditions, testing and inspection costs, costs of utilities, trash removal, parking and hoists, any other services provided by third parties unaffiliated with Tenant in connection with the construction, and the costs of after-hours freight elevator usage (provided that there will be no extra charge for after-hours freight elevator usage);

**2.2.1.4** the cost of any changes in the Base, Shell and Core work when such changes are required by the Construction Drawings (including if such changes are due to the fact that such work is prepared on an unoccupied basis), such cost to include all direct architectural and/or engineering fees and expenses incurred in connection therewith;

**2.2.1.5** the cost of any changes to the Construction Drawings or Tenant Improvements required by applicable laws;

**2.2.1.6** sales and use taxes and Title 24 fees;

**2.2.1.7** the "**Coordination Fee**", as that term is defined in Section 4.2.2.2 of this Work Letter; and

**2.2.1.8** all other costs to be expended by Tenant in connection with the construction of the Tenant Improvements.

**2.2.2** Disbursement of Tenant Improvement Allowance. Subject to Section 2.1 above, during the construction of the Tenant Improvements, Landlord shall make monthly disbursements of the Tenant Improvement Allowance for Tenant Improvement Allowance Items for the benefit of Tenant and shall authorize the release of monies for the benefit of Tenant as follows:

**2.2.2.1** Monthly Disbursements. On or before the last day of each calendar month during the construction of the Tenant Improvements (or such other date as Landlord may designate), Tenant shall deliver to Landlord: (i) a request for payment of the "**Contractor**", as that term is defined in Section 4.1 below, approved by Tenant, in a reasonable form to be provided by Landlord, showing the schedule, by trade, of percentage of completion of the Tenant Improvements in the Premises, detailing the portion of the work completed and the portion not completed, and demonstrating that the relationship between the cost of the work completed and the cost of the work to be completed complies with the terms of the "**Final Costs Statement**", as that term is defined in Section 4.2.1 below; (ii) invoices from all of "**Tenant's Agents**", as that term is defined in Section 4.1.2 below, for labor rendered and materials delivered to the Premises; (iii) executed mechanic's lien releases from all of Tenant's Agents which shall comply with the appropriate provisions, as reasonably determined by Landlord, of California Civil Code Section 8122 et seq.; and (iv) all other information reasonably requested by Landlord. Tenant's request for payment shall be deemed Tenant's acceptance and approval of the work furnished and/or the materials supplied as set forth in Tenant's payment request. On or before the last day of the following calendar month, Landlord shall deliver a check to Tenant made payable to Tenant in payment of the lesser of (A) the amounts so requested by Tenant, as set forth in this Section 2.2.2.1, above, less a ten percent (10%) retention (the aggregate amount of such retentions to be known as the "**Final Retention**") and (B) the balance of any remaining available portion of the Tenant Improvement Allowance (not including the Final Retention), provided that Landlord does not dispute any request for payment based on non-compliance of any work with the "**Approved Working Drawings**", as that term is defined in Section 3.4 below. Landlord's

payment of such amounts shall not be deemed Landlord's approval or acceptance of the work furnished or materials supplied as set forth in Tenant's payment request.

**2.2.2.2** Final Retention. Subject to the provisions of this Work Letter, a check for the Final Retention payable to Tenant shall be delivered by Landlord to Tenant promptly following the completion of construction of the Premises, provided that (i) Tenant delivers to Landlord properly executed mechanics lien releases in compliance with both California Civil Code Section 8134 and either Section 8136 or Section 8138 and any successor statutes, and (ii) Landlord has reasonably determined that no substandard work exists which adversely affects the mechanical, electrical, plumbing, heating, ventilating and air conditioning, life safety or other systems of the Building, the curtain wall of the Building, or the structure or exterior appearance of the Building.

**2.2.2.3** Other Terms. Landlord shall only be obligated to make disbursements from the Tenant Improvement Allowance to the extent costs are incurred by Tenant for Tenant Improvement Allowance Items.

**2.2.3** Disbursement of HVAC Allowance and Roof Allowance. Landlord shall make monthly disbursements of the HVAC Allowance for the HVAC Work and Roof Allowance for the Roof Work and shall authorize the release of monies for the benefit of Tenant as follows: On or before the last day of each calendar month during the HVAC Work and/or the Roof Work, as applicable, Tenant shall deliver to Landlord: (i) invoices from contractors or subcontractors retained by Tenant in connection with the HVAC Work or the Roof Work; (ii) executed mechanic's lien releases from all of Tenant's Agents which shall comply with the appropriate provisions, as reasonably determined by Landlord, of California Civil Code Section 8122 et seq.; and (iii) all other information reasonably requested by Landlord. Tenant's request for payment shall be deemed Tenant's acceptance and approval of the work furnished and/or the materials supplied as set forth in Tenant's payment request. On or before the last day of the following calendar month, Landlord shall deliver a check to Tenant made payable to Tenant in the amounts so requested by Tenant above, less the Final Retention, which Final Retention shall be paid by Landlord to Tenant following the completion of the HVAC Work and the Roof Work provided that (x) Tenant delivers to Landlord properly executed mechanics' lien releases in compliance with both California Civil Code Section 8134 and either Section 8136 or 8138 and any successor statutes, and (y) Landlord has reasonably determined that no substandard work exists which adversely affects the Building's Structure or the Building's Systems. Landlord's payment of such amounts shall not be deemed Landlord's approval or acceptance of the work furnished or materials supplied as set forth in Tenant's payment request.

## SECTION 3

## CONSTRUCTION DRAWINGS

**3.1** **Selection of Architect/Construction Drawings**. Tenant shall retain the architect/space planner (the "**Architect**") approved by Landlord, which approval shall not be unreasonably withheld and shall be granted or denied within three (3) Business Days upon request, to prepare the Construction Drawings. Landlord's failure to respond within such three (3) Business Day period shall be deemed approval by Landlord. Tenant shall retain the engineering consultants (the "**Engineers**") approved by Landlord, which approval shall not be unreasonably withheld and shall be granted or denied within three (3) Business Days upon request, to prepare all plans and engineering working drawings relating to the structural, mechanical, electrical, plumbing, HVAC, life safety, and sprinkler work in the Premises. Landlord's failure to respond within such three (3) Business Day period shall be deemed approval by Landlord. The plans and drawings to be prepared by Architect and the Engineers hereunder shall be known collectively as the "**Construction Drawings**". All Construction Drawings shall comply with the drawing format and specifications reasonably determined by Landlord, and shall be subject to Landlord's approval

within five (5) Business Days after delivery to Landlord. In the event Landlord fails to respond within such five (5) Business Day period, Tenant shall send a reminder notice to Landlord and Landlord's failure to respond to the reminder notice within two (2) Business Days after receipt thereof shall be deemed approval by Landlord. Tenant and Architect shall verify, in the field, the dimensions and conditions as shown on the relevant portions of the base building plans, and Tenant and Architect shall be solely responsible for the same, and Landlord shall have no responsibility in connection therewith. Landlord's review of the Construction Drawings as set forth in this Section 3, shall be for its sole purpose and shall not imply Landlord's review of the same, or obligate Landlord to review the same, for quality, design, Code compliance or other like matters. Accordingly, notwithstanding that any Construction Drawings are reviewed by Landlord or its space planner, architect, engineers and consultants, and notwithstanding any advice or assistance which may be rendered to Tenant by Landlord or Landlord's space planner, architect, engineers, and consultants, Landlord shall have no liability whatsoever in connection therewith and shall not be responsible for any omissions or errors contained in the Construction Drawings.

**3.2** **Final Space Plan**. Tenant shall supply Landlord with four (4) copies signed by Tenant of its final space plan for the Premises before any architectural working drawings or engineering drawings have been commenced. The final space plan (the "**Final Space Plan**") shall include a layout and designation of all offices, rooms and other partitioning, their intended use, and equipment to be contained therein. Landlord may request clarification or more specific drawings for special use items not included in the Final Space Plan. Landlord shall reasonably advise Tenant within five (5) Business Days after Landlord's receipt of the Final Space Plan for the Premises if the same is unsatisfactory or incomplete in any respect and the manner in which the Final Space Plan is unsatisfactory or incomplete. If Tenant is so advised, Tenant shall promptly (i) cause the Final Space Plan to be revised to correct any deficiencies or other matters Landlord may reasonably require, and (ii) deliver such revised Final Space Plan to Landlord. In the event Landlord fails to respond within such five (5) Business Day period, Tenant shall send a reminder notice to Landlord and Landlord's failure to respond to the reminder notice within two (2) Business Days after receipt thereof shall be deemed approval by Landlord.

**3.3** **Final Working Drawings**. After the Final Space Plan has been approved by Landlord and Tenant, Tenant shall promptly cause the Architect and the Engineers to complete the architectural and engineering drawings for the Premises, and cause the Architect to compile a fully coordinated set of architectural, structural, mechanical, electrical and plumbing working drawings in a form which is complete to allow subcontractors to bid on the work and to obtain all applicable permits for the Tenant Improvements (collectively, the "**Final Working Drawings**"), and shall submit the same to Landlord for Landlord's approval. Tenant shall supply Landlord with four (4) copies signed by Tenant of such Final Working Drawings. Landlord shall reasonably advise Tenant within five (5) Business Days after Landlord's receipt of the Final Working Drawings for the Premises if the same is unsatisfactory or incomplete in any respect and the manner in which the Final Working Drawings is unsatisfactory or incomplete. If Tenant is so advised, Tenant shall promptly (i) revise the Final Working Drawings in accordance with such review and any disapproval of Landlord in connection therewith, and (ii) deliver such revised Final Working Drawings to Landlord. In the event Landlord fails to respond within such five (5) Business Day period, Tenant shall send a reminder notice to Landlord and Landlord's failure to respond to the reminder notice within two (2) Business Days after receipt thereof shall be deemed approval by Landlord.

**3.4** **Approved Working Drawings**. The Final Working Drawings shall be approved by Landlord in accordance with Section 3.3 above (the "**Approved Working Drawings**") prior to the commencement of construction of the Tenant Improvements by Tenant. After approval by Landlord of the Final Working Drawings, Tenant shall promptly submit the same to the appropriate governmental authorities for all applicable building permits. Tenant hereby agrees that neither Landlord nor Landlord's consultants shall be responsible for obtaining any building permit or certificate of occupancy for the Tenant Improvements and that obtaining the same shall be Tenant's responsibility; provided, however, that

Landlord shall cooperate with Tenant in executing permit applications and performing other ministerial acts reasonably necessary to enable Tenant to obtain any such permit or certificate of occupancy. No changes, modifications or alterations in the Approved Working Drawings may be made without the prior written consent of Landlord, which consent shall not be unreasonably withheld, conditioned, or delayed; provided that Landlord may withhold its consent, in its sole discretion, to any change in the Approved Working Drawings, if such change would result in an Over Allowance Amount (as defined below), and Tenant does not agree in writing to pay such Over Allowance Amount.

**3.5** **Changes to the Approved Working Drawings**. Any changes to the Approved Working Drawings (each, a "**Change**") shall be requested and instituted in accordance with the provisions of this Section 3.5 and shall be subject to the written approval of the non-requesting party in accordance with this Work Letter.

**3.5.1** Change Request. Either Landlord or Tenant may request Changes after Landlord approves the Final Working Drawings by notifying the other party thereof in writing in substantially the same form as the AIA standard change order form (a "**Change Request**"), which Change Request shall detail the nature and extent of any requested Changes and any modification of the Approved Working Drawings, as applicable, necessitated by the Change. If the nature of a Change requires revisions to the Approved Working Drawings, then the requesting party shall be solely responsible for the cost and expense of such revisions and any increases in the cost of the Tenant Improvements as a result of such Change. Change Requests shall be signed by the requesting party's representative as set forth in Sections 5.1 and 5.2 herein. Landlord shall only request a Change if it reasonably believes that such Change is necessary to comply with applicable Laws or to prevent a material adverse impact on the Building's Systems; provided, however, that Landlord shall not be responsible for the cost and expense of such revision and/or any increase in the cost of the Tenant Improvements as a result of such Change.

**3.5.2** Approval of Changes. All Change Requests shall be subject to the other party's prior written approval, which approval shall not be unreasonably withheld, conditioned or delayed. The non-requesting party shall have three (3) Business Days after receipt of a Change Request to notify the requesting party in writing of the non-requesting party's decision either to approve or object to the Change Request. If the non-requesting party fails to respond within such three (3) Business Day period, the requesting party shall send a reminder notice and the non-requesting party's failure to respond to the reminder notice within two (2) Business Days after receipt thereof shall be deemed approval by the non-requesting party.

## SECTION 4

## CONSTRUCTION OF THE TENANT IMPROVEMENTS

**4.1** **Tenant's Selection of Contractor and Tenant's Agents**.

**4.1.1** The Contractor. A general contractor shall be retained by Tenant to construct the Tenant Improvements. Such general contractor ("**Contractor**") shall be subject to Landlord's approval, which approval shall not be unreasonably withheld and shall be granted or denied within three (3) Business Days upon request. Landlord's failure to respond within such three (3) Business Day period shall be deemed approval by Landlord.

**4.1.2** Tenant's Agents. A list of all subcontractors, laborers, materialmen, and suppliers used by Tenant (such subcontractors, laborers, materialmen, and suppliers, and the Contractor to be known collectively as "**Tenant's Agents**") must be provided to the Landlord, which Tenant's Agents shall all be licensed, in good standing and have a first-class reputation in their respective area of expertise. In any

event, Tenant must contract with Landlord's base building subcontractors for any mechanical, electrical, plumbing, life safety, structural, heating, ventilation, and air conditioning work in the Premises. Tenant's Agents shall all be union labor in compliance with the master labor agreements existing between trade unions and the local chapter of the Associated General Contractors of America.

**4.2 Construction of Tenant Improvements by Tenant's Agents**.

**4.2.1** Cost Budget. Prior to the commencement of the construction of the Tenant Improvements, and after Tenant has accepted all bids for the Tenant Improvements, Tenant shall provide Landlord with a written detailed cost breakdown (the "**Final Costs Statement**"), by trade, of the final costs to be incurred, or which have been incurred, as set forth more particularly in Section 2.2.1.1 through 2.2.1.8 above, in connection with the design and construction of the Tenant Improvements to be performed by or at the direction of Tenant or the Contractor (which costs form a basis for the amount of the construction contract with the Contractor, if any (the "**Final Costs**"). Tenant shall be responsible for all the Final Costs, and Tenant shall pay all such costs directly to the Contractor or other party requesting payment as and when due, provided that nothing contained in this sentence shall be construed to waive Tenant's right to receive the Tenant Improvement Allowance, the Additional Tenant Improvement Allowance, the HVAC Allowance or the Roof Allowance. In addition, to the extent the Final Costs exceed the Tenant Improvement Allowance and the Additional Tenant Improvement Allowance ("**Over Allowance Amount**"), Tenant shall pay, concurrently with each disbursement by Landlord pursuant to Section 2.2.2, a pari passu portion of the Tenant Improvement costs subject to such request, equal to the ratio obtained by dividing the Over Allowance Amount by the Final Costs ("**Pro Rata Share**"), multiplied by portion of the Tenant Improvement costs subject to such request. For purposes of illustration only, if the Final Costs are $500,000, the total allowance payable by Landlord (i.e., the Tenant Improvement Allowance and the Additional Tenant Improvement Allowance) is $250,000, and the applicable bills and invoices submitted to Landlord for a disbursement pursuant to Section 2.2.2 is $100,000, Landlord would disburse $50,000 ($250,000/$500,000 x $100,000), and Tenant would pay the remaining $50,000. In the event that, after the Final Costs have been delivered by Landlord to Tenant, the costs relating to the design and construction of the Tenant Improvements shall change, any additional costs necessary to such design and construction in excess of the Final Costs shall, to the extent they exceed the remaining balance of the Tenant Improvement Allowance, be paid by Tenant to Landlord in the same method as the payment by Tenant of the Over-Allowance Amount set forth herein.

**4.2.2** Tenant's Agents.

**4.2.2.1** Landlord's General Conditions for Tenant's Agents and Tenant Improvement Work. Tenant's and Tenant's Agents' construction of the Tenant Improvements shall comply with the following: (i) the Tenant Improvements shall be constructed in strict accordance with the Approved Working Drawings; (ii) Tenant's Agents shall submit schedules of all work relating to the Tenant's Improvements to Contractor and Contractor shall, within five (5) Business Days of receipt thereof, inform Tenant's Agents of any changes which are necessary thereto, and Tenant's Agents shall use commercially reasonable efforts to adhere to such corrected schedule; and (iii) Tenant shall abide by all reasonable rules made and provided to Tenant in writing by Landlord's Building contractor or Landlord's Building manager with respect to the use of freight, loading dock and service elevators (provided that such rules shall not include additional charge for the use of freight, loading dock and service elevators or storage of materials), storage of materials, coordination of work with the contractors of other tenants, and any other matter in connection with this Work Letter, including, without limitation, the construction of the Tenant Improvements.

**4.2.2.2** Coordination Fee. Tenant shall pay a logistical coordination fee (the "**Coordination Fee**") to Landlord in an amount equal to the product of (i) one percent (1%), and (ii) the

sum of the Tenant Improvement Allowance, the Over Allowance Amount, as such amount may be increased hereunder, and any other amounts expended by Tenant in connection with the design and construction of the Tenant Improvements, which Coordination Fee shall be for services relating to the coordination of the construction of the Tenant Improvements. In addition to the Coordination Fee and other amounts payable by Tenant hereunder, Tenant shall reimburse Landlord for reasonable amounts paid by Landlord in connection with the review of Tenant's plans and drawings as referenced in Section 3 above, which amounts shall be charged against the Tenant Improvement Allowance.

**4.2.2.3** Indemnity. Tenant's indemnity of Landlord as set forth in the Lease shall also apply with respect to any and all costs, losses, damages, injuries and liabilities related in any way to any act or omission of Tenant or Tenant's Agents, or anyone directly or indirectly employed by any of them, or in connection with Tenant's non-payment of any amount arising out of the Tenant Improvements and/or Tenant's disapproval of all or any portion of any request for payment. Such indemnity by Tenant, as set forth in the Lease, shall also apply with respect to any and all costs, losses, damages, injuries and liabilities related in any way to Landlord's performance of any ministerial acts reasonably necessary (i) to permit Tenant to complete the Tenant Improvements, and (ii) to enable Tenant to obtain any building permit or certificate of occupancy for the Premises; provided, however, that nothing contained in this Work Letter shall be deemed to indemnify Landlord from or against liability caused by Landlord's negligence or willful misconduct.

**4.2.2.4** Insurance Requirements.

**4.2.2.4.1** General Coverages. All of Tenant's Agents shall carry worker's compensation insurance covering all of their respective employees, and shall also carry commercial general liability insurance, and such other coverages as are required in Exhibit I to the Lease, all with limits, in form and with companies as are required to be carried under Exhibit I to the Lease.

**4.2.2.4.2** Special Coverages. Tenant shall carry "Builder's All Risk" insurance in an amount approved by Landlord covering the construction of the Tenant Improvements, and such other insurance as Landlord may require, it being understood and agreed that the Tenant Improvements shall be insured by Tenant pursuant to the Lease immediately upon completion thereof. Such insurance shall be in amounts and shall include such extended coverage endorsements as may be reasonably required by Landlord, and in form and with companies as are required to be carried by Tenant as set forth in the Lease.

**4.2.2.4.3** General Terms. Certificates for all insurance carried pursuant to this Section 4.2.2.4 shall be delivered to Landlord before the commencement of construction of the Tenant Improvements and before the Contractor's equipment is moved onto the site. All such policies of insurance must contain a provision that the company writing said policy will give Landlord thirty (30) days' prior written notice of any cancellation or lapse of the effective date or any reduction in the amounts of such insurance. In the event that the Tenant Improvements are damaged by any cause during the course of the construction thereof, Tenant shall immediately repair the same at Tenant's sole cost and expense. All policies carried under this Section 4.2.2.4 shall insure Landlord and Tenant, as their interests may appear, as well as Contractor and Tenant's Agents, and shall name as additional insureds all Landlord Parties (as defined in the Lease). All insurance maintained by Tenant's Agents shall preclude subrogation claims by the insurer against anyone insured thereunder. Such insurance shall provide that it is primary insurance as respects the Landlord Parties and that any other insurance maintained by Landlord Parties is excess and noncontributing with the insurance required hereunder. The requirements for the foregoing insurance shall not derogate from the provisions for indemnification of Landlord by Tenant under Section 4.2.2.3 of this Work Letter.

**4.2.3** Governmental Compliance. The Tenant Improvements shall comply in all respects with the following: (i) the Code and other state, federal, city or quasi-governmental laws, codes, ordinances and regulations, as each may apply according to the rulings of the controlling public official, agent or other person; (ii) applicable standards of the American Insurance Association (formerly, the National Board of Fire Underwriters) and the National Electrical Code; and (iii) building material manufacturer's specifications.

**4.2.4** Inspection by Landlord. Landlord shall have the right to inspect the Tenant Improvements during normal business hours upon reasonable advance notice, provided however, that Landlord's failure to inspect the Tenant Improvements shall in no event constitute a waiver of any of Landlord's rights hereunder nor shall Landlord's inspection of the Tenant Improvements constitute Landlord's approval of the same. Should Landlord disapprove any portion of the Tenant Improvements, Landlord shall notify Tenant in writing of such disapproval and shall specify the items disapproved. Any defects or deviations in, and/or disapproval by Landlord of, the Tenant Improvements shall be rectified by Tenant at no expense to Landlord, provided however, that in the event Landlord determines that a defect or deviation exists or disapproves of any matter in connection with any portion of the Tenant Improvements and such defect, deviation or matter might adversely affect the mechanical, electrical, plumbing, heating, ventilating and air conditioning or life safety systems of the Building, the structure or exterior appearance of the Building or any other tenant's use of such other tenant's leased premises, and Tenant fails to commence to remedy the same within thirty (30) days after Landlord's written notice thereof or fails to diligently execute to completion, Landlord may, take such action as Landlord deems reasonably necessary, at Tenant's expense and without incurring any liability on Landlord's part, to correct any such defect, deviation and/or matter, including, without limitation, causing the cessation of performance of the construction of the Tenant Improvements until such time as the defect, deviation and/or matter is corrected to Landlord's reasonable satisfaction.

**4.2.5** Meetings. Commencing upon the execution of the Lease, Tenant shall hold weekly meetings at a reasonable time, with the Architect and the Contractor regarding the progress of the preparation of Construction Drawings and the construction of the Tenant Improvements, which meetings shall be held at the Premises (unless otherwise notified by Tenant to Landlord in writing), and Landlord and/or its agents shall receive prior notice of, and shall have the right to attend, all such meetings, and, upon Landlord's reasonable request, certain of Tenant's Agents shall attend such meetings. In addition, minutes shall be taken at all such meetings, a copy of which minutes shall be promptly delivered to Landlord. One such meeting each month shall include the review of Contractor's current request for payment.

**4.3** **Notice of Completion; Copy of "As Built" Plans**. Within ten (10) days after completion of construction of the Tenant Improvements, Tenant shall cause a Notice of Completion to be recorded in the office of the Recorder of the County in which the Building is located in accordance with Section 3093 of the Civil Code of the State of California or any successor statute, and shall furnish a copy thereof to Landlord upon such recordation. If Tenant fails to do so, Landlord may execute and file the same on behalf of Tenant as Tenant's agent for such purpose, at Tenant's sole cost and expense. At the conclusion of construction, (i) Tenant shall cause the Architect and Contractor (A) to update the Approved Working Drawings as necessary to reflect all changes made to the Approved Working Drawings during the course of construction, (B) to certify to the best of their knowledge that the "record set" of as built drawings are true and correct, which certification shall survive the expiration or termination of the Lease, (C) to deliver to Landlord two (2) sets of sepias of such as built drawings within ninety (90) days following issuance of a certificate of occupancy for the Premises, and (D) to deliver to Landlord a computer disk containing the Approved Working Drawings in AutoCAD format, and (ii) Tenant shall deliver to Landlord a copy of all warranties, guaranties, and operating manuals and information relating to the improvements, equipment, and systems in the Premises.

**4.4** **Coordination by Tenant's Agents with Landlord**. Upon Tenant's delivery of the Final Costs Statement to Landlord under Section 4.2.1 of this Work Letter, Tenant shall furnish Landlord with a schedule (the "**Schedule**") setting forth the projected date of the completion of the Tenant Improvements and showing the critical time deadlines for each phase, item or trade relating to the construction of the Tenant Improvements. Such Schedule is subject to adjustment, and Tenant shall notify Landlord in writing of any adjustment thereto.

## SECTION 5

## MISCELLANEOUS

**5.1** **Tenant's Representative**. Tenant will designate its representative within five (5) days after the execution of this Lease who will be its sole representative with respect to the matters set forth in this Work Letter and shall have full authority and responsibility to act on behalf of the Tenant as required in this Work Letter.

**5.2** **Landlord's Representative**. Landlord has designated Cameron Bassett as its sole representative with respect to the matters set forth in this Work Letter, who, until further notice to Tenant, shall have full authority and responsibility to act on behalf of the Landlord as required in this Work Letter.

**5.3** **Time of the Essence in This Work Letter**. Unless otherwise indicated, all references herein to a "number of days" shall mean and refer to calendar days. If any item requiring approval is timely disapproved by Landlord, the procedure for preparation of the document and approval thereof shall be repeated until the document is approved by Landlord.

**5.4** **Tenant's Lease Default**. Notwithstanding any provision to the contrary contained in the Lease, if an Event of Default by Tenant of this Work Letter or the Lease has occurred at any time on or before the Substantial Completion of the Tenant Improvements, then (i) in addition to all other rights and remedies granted to Landlord pursuant to the Lease, at law and/or in equity, Landlord shall have the right to withhold payment of all or any portion of the Tenant Improvement Allowance and/or Landlord may cause Contractor to cease the construction of the Tenant Improvements (in which case, Tenant shall be responsible for any delay in the Substantial Completion of the Tenant Improvements caused by such work stoppage), and (ii) all other obligations of Landlord under the terms of this Work Letter shall be forgiven until such time as such default is cured pursuant to the terms of the Lease (in which case, Tenant shall be responsible for any delay in the Substantial Completion of the Premises caused by such inaction by Landlord). In addition, if the Lease is terminated prior to the Commencement Date, for any reason due to an Event of Default by Tenant as described in Section 17 of the Lease or under this Work Letter, in addition to any other remedies available to Landlord under the Lease, at law and/or in equity, Tenant shall pay to Landlord, as Additional Rent under the Lease, within five (5) days of receipt of a statement therefor, any and all reasonable costs (if any) incurred by Landlord (including any portion of the Tenant Improvement Allowance disbursed by Landlord) and not reimbursed or otherwise paid by Tenant through the date of such termination in connection with the Tenant Improvements to the extent planned, installed and/or constructed as of such date of termination, including, but not limited to, any costs related to the removal of all or any portion of the Tenant Improvements and restoration costs related thereto. For purposes of this Section 5, "**Substantial Completion of the Tenant Improvements**" shall mean completion of construction of the Tenant Improvements in the Premises pursuant to the Approved Working Drawings, with the exception of any punch list items.

**5.5** **Landlord Caused Delays**. The Commencement Date shall be extended on a day-to-day basis by the number of days of actual delay of the Substantial Completion of the Tenant Improvements in the Premises caused by a Landlord Caused Delay, as that term is defined below, but only to the extent such

Landlord Caused Delay actually causes the Substantial Completion of the Tenant Improvements to occur after December 1, 2018. As used in this Work Letter, "**Landlord Caused Delay**" shall mean delays to the extent resulting from the acts or omissions of Landlord, its agents, employees or contractors, including, but not limited to: (i) failure of Landlord to timely approve or disapprove any Construction Drawings or any other matter that requires Landlord's approval within the time periods set forth in this Work Letter; (ii) material and unreasonable interference by Landlord, its agents, employees or contractors with construction of the Tenant Improvements, including, without limitation, interference relating to access by Tenant, or Tenant's Agents to the Building or service; or (iii) delays due to the acts or failures to act of Landlord with respect to the payment of the Tenant Improvement Allowance, Additional Tenant Improvement Allowance and/or HVAC Allowance (except as otherwise allowed under this Work Letter).

No Landlord Caused Delay shall be deemed to have occurred unless and until Tenant has provided written notice to Landlord specifying the action or inaction that Tenant contends constitutes a Landlord Caused Delay. If such action or inaction is not cured within one (1) Business Day after receipt of such notice, then a Landlord Caused Delay shall be deemed to have occurred commencing as of the date such notice is received and continuing for the number of days the design and construction of the Tenant Improvements was in fact delayed as a direct result of such action or inaction.

**EXHIBIT E**

**BUILDING RULES AND REGULATIONS**

The following rules and regulations shall apply to the Premises, the Building, the parking area associated therewith, and the appurtenances thereto:

1. Sidewalks, main doorways, stairways, and other similar areas shall not be obstructed by Tenant or used by Tenant for purposes other than ingress and egress to and from the Premises.

2. Plumbing, fixtures and appliances shall be used only for the purposes for which designed, and no sweepings, rubbish, rags or other unsuitable material shall be thrown or deposited therein. Damage resulting to any such fixtures or appliances from misuse by a tenant or its agents, employees or invitees, shall be paid by such tenant.

3. No signs, advertisements or notices (other than those that are not visible outside the Premises) shall be painted or affixed on or to any exterior windows or doors or other part of the Building without the prior written consent of Landlord.

4. In connection with the movement in or out of the Building of furniture, fixtures or equipment, or dispatch or receipt by Tenant of any bulky material, merchandise or materials, Tenant assumes all risks of and shall be liable for all damage to articles moved and injury to persons or public engaged or not engaged in such movement.

5. Landlord may prescribe reasonable weight limitations and reasonably determine the locations for safes and other heavy equipment or items, which shall in all cases be placed in the Building so as to distribute weight in a manner reasonably acceptable to Landlord which may include the use of such supporting devices as Landlord may reasonably require. All damages to the Building caused by Tenant's installation or removal of any property of a tenant, or done by a tenant's property while in the Building, shall be repaired at the expense of Tenant.

6. No birds or animals (other than seeing-eye dogs or service animals) shall be brought into or kept in, on or about any tenant's leased premises. No portion of any tenant's leased premises shall at any time be used or occupied as sleeping or lodging quarters.

7. Landlord will not be responsible for lost or stolen personal property, money or jewelry from tenant's leased premises or public or common areas regardless of whether such loss occurs when the area is locked against entry or not except to the extent caused by the gross negligence or willful misconduct of Landlord or Landlord's agents, employees or contractors.

8. Tenant shall not conduct any activity on or about the Premises or Building which will draw pickets, demonstrators, or the like.

9. All vehicles are to be currently licensed, in good operating condition, parked for business purposes having to do with Tenant's business operated in the Premises, parked within designated parking spaces, one vehicle to each space. No vehicles may be stored in the parking areas. No vehicle shall be parked as a "billboard" vehicle in the parking lot. Any vehicle parked improperly may be towed away. Tenant, Tenant's agents, employees, vendors and customers who do not operate or park their vehicles as required shall subject the vehicle to being towed at the expense of the owner or driver. Landlord may place a "boot" on the vehicle to immobilize it and may levy a charge of $50.00 to remove the "boot".

10. Tenant shall not permit its employees, invitees or guests to smoke in the Premises, nor shall any tenant permit its employees, invitees, or guests to loiter at the Building entrances for the purposes of smoking. Landlord may, but shall not be required to, designate an area for smoking outside the Building.

11. Canvassing, soliciting or peddling in or about the Premises or the Property is prohibited and Tenant shall cooperate to prevent same.

12. Tenant shall not advertise for temporary laborers giving the Premises or the Project as an address, nor pay such laborers at a location in the Premises or the Project.

13. Tenant shall park trailers and other oversized vehicles only in areas designated by Landlord for the parking of trailers or oversized vehicles. Tenant shall not park trailers and other oversized vehicles in streets or other public areas in the Complex.

14. Tenant shall not utilize the Premises or Project for outside storage except with the written consent of Landlord. The prohibition against outside storage includes, but is not limited to, equipment, materials, vehicles, campers, trailers, boats, barrels, pallets, and trash (other than in containers provided by commercial trash collectors which are picked up on a regularly scheduled basis).

**EXHIBIT F**

**CONFIRMATION OF COMMENCEMENT DATE**

**_____ ___, 20__**

Re: Lease Agreement (the "**Lease**") dated November 3, 2017, between MARINA BOULEVARD PROPERTY, LLC, a Delaware limited liability company ("**Landlord**"), and SANGAMO THERAPEUTICS, INC., a Delaware corporation ("**Tenant**"). Capitalized terms used herein but not defined shall be given the meanings assigned to them in the Lease.

Ladies and Gentlemen:

Landlord and Tenant agree as follows:

1. Condition of Premises. Tenant has accepted the Premises pursuant to the Lease. Tenant acknowledges that the Premises are suitable for the Permitted Use.

2. Commencement Date. The Commencement Date of the Lease is _____ ___, 20__.

3. Expiration Date. The Term is scheduled to expire on the last day of the [*_____ (___)*] full calendar month of the Term, which date is _____, 20__.

4. Contact Person. Tenant's contact person in the Premises is:

Attention: _____
Telephone: _____
Telecopy: _____

5. Base Rent. Base Rent shall be payable monthly in advance in accordance with the following schedule:

| Lease Month | Annual Base Rent | Monthly Base Rent | Monthly Rental Rate Per RSF |
|---|---|---|---|
| 1 – 12* | $ | $ | $ |
| 13 – 24* | $ | $ | $ |
| 25 – 36 | $ | $ | $ |
| 37 – 48 | $ | $ | $ |
| 49 – 60 | $ | $ | $ |
| 61 – 72 | $ | $ | $ |
| 73 – 84 | $ | $ | $ |
| 85 – 96 | $ | $ | $ |
| 97 – 108 | $ | $ | $ |
| 109 – 120 | $ | $ | $ |
| 121 – 132 | $ | $ | $ |

6. Ratification. Tenant hereby ratifies and confirms its obligations under the Lease, and represents and warrants to Landlord that it has no defenses thereto. Additionally, Tenant further confirms and ratifies that, as of the date hereof, (a) the Lease is and remains in good standing and in full force and

effect, and (b) to Tenant's knowledge, Tenant has no claims, counterclaims, set-offs or defenses against Landlord arising out of the Lease or in any way relating thereto or arising out of any other transaction between Landlord and Tenant.

7. Binding Effect; Governing Law. Except as modified hereby, the Lease shall remain in full effect and this letter shall be binding upon Landlord and Tenant and their respective successors and assigns. If any inconsistency exists or arises between the terms of this letter and the terms of the Lease, the terms of this letter shall prevail. This letter shall be governed by the laws of the state in which the Premises are located.

Please indicate your agreement to the above matters by signing this letter in the space indicated below and returning an executed original to us.

Sincerely,

MARINA LANDING PROPERTY, LLC,
a Delaware limited liability company

By:
Printed Name:
Title:

By:
Printed Name:
Title:

Execution Date:, 2017

Agreed and accepted:

**TENANT**:

SANGAMO THERAPEUTICS, INC.,
a Delaware corporation

By:
Printed Name:
Title:

Execution Date:, 2017

**EXHIBIT G**

**FORM OF TENANT ESTOPPEL CERTIFICATE**

The undersigned is the Tenant under the Lease (defined below) between _____, a _____, as Landlord, and the undersigned as Tenant, for the Premises on the _____ floor(s) of the office building located at _____, _____ and commonly known as _____, and hereby certifies as follows:

1. The Lease consists of the original Lease Agreement dated as of _____, 20___ between Tenant and Landlord [‘s predecessor-in-interest] and the following amendments or modifications thereto (if none, please state “none”): _____

The documents listed above are herein collectively referred to as the “Lease” and represent the entire agreement between the parties with respect to the Premises. All capitalized terms used herein but not defined shall be given the meaning assigned to them in the Lease.

2. The Lease is in full force and effect and has not been modified, supplemented or amended in any way except as provided in Section 1 above.

3. The Term commenced on _____, 20__, and the Term expires, excluding any renewal options, on _____, 20__, and Tenant has no option to purchase all or any part of the Premises or the Building or, except as expressly set forth in the Lease, any option to terminate or cancel the Lease.

4. Tenant currently occupies the Premises described in the Lease and Tenant has not transferred, assigned, or sublet any portion of the Premises nor entered into any license or concession agreements with respect thereto except as follows (if none, please state “none”):

5. All monthly installments of Base Rent, all Additional Rent and all monthly installments of estimated Additional Rent have been paid when due through _____. The current monthly installment of Base Rent is $_____.

6. To Tenant’s knowledge, all conditions of the Lease to be performed by Landlord necessary to the enforceability of the Lease have been satisfied and Landlord is not in default thereunder. In addition, Tenant has not delivered any notice to Landlord regarding a default by Landlord thereunder.

7. As of the date hereof, to the undersigned’s knowledge, there are no existing defenses or offsets, or claims or any basis for a claim, that the undersigned has against Landlord and no event has occurred and no condition exists, which, with the giving of notice or the passage of time, or both, will constitute a default under the Lease.

8. No rental has been paid more than thirty (30) days in advance and no security deposit has been delivered to Landlord except as provided in the Lease.

9. If Tenant is a corporation, partnership or other business entity, Tenant hereby represents and warrants that Tenant is a duly formed and existing entity qualified to do business in the state in which the Premises are located and that Tenant has full right and authority to execute and deliver this Estoppel Certificate and each person signing on behalf of Tenant is authorized to do so.

10. There are no actions pending against Tenant under any bankruptcy or similar laws of the United States or any state.

11. Other than as permitted by the Lease and used in compliance with all applicable laws and incidental to the ordinary course of the use of the Premises, the undersigned has not used or stored any hazardous substances in the Premises.

12. All reimbursements and allowances due to the undersigned under the Lease in connection with any tenant improvement work have been paid in full except for _____.

Tenant acknowledges that this Estoppel Certificate may be delivered to Landlord, Landlord's Mortgagee or to a prospective mortgagee or prospective purchaser, and their respective successors and assigns, and acknowledges that Landlord, Landlord's Mortgagee and/or such prospective mortgagee or prospective purchaser will be relying upon the statements contained herein in disbursing loan advances or making a new loan or acquiring the property of which the Premises are a part and that receipt by it of this certificate is a condition of disbursing loan advances or making such loan or acquiring such property.

Executed as of _____, 20__.

**TENANT:**

a

By:
Name:
Title:

**EXHIBIT H**

**RENEWAL OPTION**

If Tenant has not committed a default (which is not cured by the time Tenant exercises its option to renew), and Tenant is occupying the entire Premises at the time of such election (provided that Tenant shall be deemed to occupy the entire Premises even if a portion of the Premises is occupied by a Permitted Transferee), Tenant may renew this Lease for two (2) additional period(s) of five (5) years each, by delivering written notice of the exercise thereof to Landlord not earlier than fifteen (15) months nor later than nine (9) months before the expiration of the then-current Term ("**Tenant's Election Notice**"). Any extension of the Term shall be on all the same terms and conditions as this Lease, except as expressly set forth herein. The Base Rent payable for each month during such extended Term shall be equal to ninety percent (90%) of the prevailing rental rate (the "**Prevailing Rental Rate**"), at the commencement of such extended Term, for renewals of space in the Complex and in comparable buildings with comparable life science tenant(s) and comparable build-out (containing the systems and improvements present in the Premises including similar concentration of lab space) located within North San Mateo County, California, of equivalent quality, size, utility, age, level of finish, proximity to amenities and public transit, and location, with the length of the extended Term, any concessions offered to new tenants, (such as free rent, tenant improvement allowances and moving allowances), whether or not there will be a charge for parking, and the credit standing of Tenant to be taken into account (such factors, the "**Relevant Factors**"). Within fifteen (15) days after receipt of Tenant's Election Notice, Landlord shall deliver to Tenant written notice of the Prevailing Rental Rate and shall advise Tenant of the required adjustment to Base Rent, if any. Tenant shall, within ten (10) days after receipt of Landlord's notice, notify Landlord in writing whether Tenant accepts or rejects Landlord's determination of the Prevailing Rental Rate. If Tenant timely notifies Landlord that Tenant accepts Landlord's determination of the Prevailing Rental Rate, then, on or before the commencement date of the extended Term, Landlord and Tenant shall execute an amendment to this Lease extending the Term on the same terms provided in this Lease, except as follows:

(a) Base Rent and the annual increase shall be adjusted to the Prevailing Rental Rate;

(b) Tenant shall have no further renewal option after exercising the second renewal option unless expressly granted by Landlord in writing; and

(c) Landlord shall lease to Tenant the Premises in their then-current condition, and Landlord shall not provide to Tenant any allowances (e.g., moving allowance, construction allowance, and the like) or other tenant inducements.

If by the date thirty (30) days following delivery of Tenant's Election Notice, Landlord and Tenant have not agreed in writing as to the amount of the Base Rent, the parties shall determine the projected Prevailing Rental Rate in accordance with the following procedure (which procedure is herein referred to as the "**Three-Appraiser Method**"). Landlord and Tenant shall each appoint one (1) real estate appraiser, and the two (2) so appointed shall select a third. Said real estate appraisers shall each be licensed in the state in which the Premises is located, specializing in the field of commercial real estate in North San Mateo County, California, having no less than ten (10) years' experience in such field, unaffiliated with either Landlord or Tenant and recognized as ethical and reputable within their field. Landlord and Tenant agree to make their appointments promptly within ten (10) days after expiration of the thirty (30) day negotiation period, or sooner if mutually agreed upon. The two (2) appraisers selected by Landlord and Tenant shall promptly select a third appraiser within fifteen (15) days after they both have been appointed, and each appraiser, within fifteen (15) days after the third appraiser is selected, shall submit his or her determination of the then projected Prevailing Rental Rate after taking into account all the Relevant Factors. Such third appraiser shall choose one of the two (2) Prevailing Rental Rates submitted by the parties which most closely represents the projected prevailing market rate after taking into account all the Relevant Factors.

Such Prevailing Rental Rate chosen by the appraiser shall be final and binding upon the parties. If either Landlord or Tenant fails to appoint an appraiser within the time period specified in this paragraph, the appraiser appointed by one of them shall reach a decision, notify Landlord and Tenant thereof, and such appraiser's decision shall be binding upon Landlord and Tenant. Each party shall pay the fees and expenses of the appraiser appointed by or on behalf of it, and each shall pay one-half of the fees and expenses of the third appraiser.

Parties shall confirm the parties' acceptance of the determination of the Prevailing Rental Rate by executing an amendment to this Lease memorializing the same within ten (10) days of such determination (herein the "**Extension Amendment**"). Failure to execute and deliver the Extension Amendment within such 10-day period shall not affect the enforceability of the extension exercised by Tenant.

Notwithstanding anything in the foregoing to the contrary, at Landlord's option, and in addition to all of Landlord's remedies under this Lease, at law or in equity, the right to extend the Term of this Lease hereinabove granted to Tenant shall not be deemed to be properly exercised if, as of the date Tenant exercises its extension right or on the scheduled commencement date for the applicable option term, Tenant is in default under this Lease beyond any applicable notice and cure period. Further, Tenant's rights under this Exhibit shall terminate if (1) this Lease or Tenant's right to possession of the Premises is terminated, (2) Tenant assigns any of its interest in this Lease or sublets any portion of the Premises to any party other than a Permitted Transferee, or (3) Tenant fails to timely exercise its option under this Exhibit, time being of the essence with respect to Tenant's exercise thereof.

**EXHIBIT I**

**CONTRACTOR INSURANCE REQUIREMENTS**

I-1. The following defined terms apply for purposes of this Exhibit. Other capitalized terms used but not defined in this Exhibit will have the meanings given to such terms in the Lease to which this Exhibit is attached. "**Work**" means the applicable work to be performed at the Premises, and to which the requirements of this Exhibit relate pursuant to the Lease. "**Contractor**" means Tenant's general contractor with respect to the Work. "**Subcontractors**" means any person retained by the Contractor as an independent contractor to provide labor, materials, equipment, or services necessary to complete a specific portion of the Work, and their sub-subcontractors of every tier. "**Landlord Parties**" means Landlord; Landlord's property manager with respect to the Premises; Landlord's Mortgagee; other entities or individuals Landlord may designate from time to time to be included as additional insureds (e.g., by requiring that they be listed as additional insureds on certificates of insurance); the successors and assigns, and direct and indirect affiliates, of each of the foregoing; and, with respect to each of the foregoing, its shareholders, trustees, beneficiaries, managers, officers, directors, employees, and agents.

I-2. Tenant shall require its Contractor to maintain insurance that satisfies the following requirements (except Landlord may reasonably adjust the minimum limits provided herein from time to time time):

(a) Commercial general liability insurance on the current ISO CG 00 01 form or an equivalent occurrence form that (i) has limits of not less than the greater of (A) $1,000,000 each occurrence, $1,000,000 personal and advertising injury, $2,000,000 general aggregate (per-project), and $2,000,000 products-completed operations aggregate and (B) the limits the Contractor actually carries, and (ii) includes the Landlord Parties as additional insureds on a primary and noncontributing basis, providing them with coverage at least as broad as that given to the named insured. The Contractor shall maintain its products-completed operations coverage for at least five years after completion of the Work, and shall include the Landlord Parties as additional insureds on a primary and non-contributing basis during this period.

(b) Business auto insurance covering any auto (including owned, hired, and non-owned autos), with a limit of not less than $1,000,000 each accident.

(c) Workers compensation and employers liability insurance for all persons that perform Work for the Contractor. The workers compensation insurance must fulfill applicable statutory requirements. The employers liability insurance must have limits of not less than $1,000,000 each accident, $1,000,000 each employee, and $1,000,000 policy limit.

(d) Commercial excess or umbrella liability insurance on a "follow form" basis, with a limit of not less than $10,000,000 each occurrence and annual aggregate. This insurance must provide that aggregate limits of liability apply separately with respect to the Work. Notwithstanding the specified minimum limits in this Section I-2 for primary commercial general liability, business auto, and employers liability insurance and the separate specified minimum limit for commercial excess or umbrella liability insurance, in each case this Section I-2 is to be construed as requiring only the combined primary and excess/umbrella minimum limit and that combined minimum limit may be achieved with any combination of primary and excess or umbrella insurance.

(e) Professional liability insurance, if the Work includes any professional services (including any design-build component of the Work), with limits of not less than $1,000,000 each claim and

$1,000,000 annual aggregate. If the Contractor performs the professional services, then it shall carry this insurance; if a Subcontractor performs the services, then Contractor shall require the Subcontractor to carry this insurance.

(f) Property insurance for job trailers, machinery, tools, equipment, property of a similar nature owned or leased by the Contractor or Subcontractors and not destined to become a part of the completed construction, and the Contractor must waive, and require its Subcontractors (including lessors of equipment) to waive, all claims against the Landlord Parties for loss or damage to these items, regardless of the cause.

I-3. Tenant shall require the Contractor to waive all rights against the Landlord Parties to the extent any damage is covered by insurance maintained by the Contractor, or is attributable to any deductible or self-insured retention relating to insurance maintained by the Contractor, and shall ensure that its policies permit this waiver of subrogation by endorsement or otherwise.

I-4. Tenant shall require the Contractor, by written agreement, to require its Subcontractors to maintain the insurance and make the waivers required of the Contractor in this Exhibit, except that with respect to Subcontractors' insurance Tenant may permit its Contractor, with Landlord's consent, to reduce or waive the commercial excess or umbrella liability insurance requirement in circumstances where such reduction or waiver for that Subcontractor (given its scope of Work) is commercially reasonable and customary. Tenant shall require the Contractor to obtain certificates of insurance from its Subcontractors evidencing the insurance required under this Exhibit.

I-5. All insurance policies required under this Exhibit must be issued by reputable, financially sound companies that have an A.M. Best rating of A- VIII or better. Before commencement of the Work, Tenant shall require the Contractor to provide to Landlord a certificate of insurance evidencing the required insurance and, if requested, the Contractor's additional insured endorsement. Tenant shall require the Contractor to provide an updated certificate of insurance before the expiration of the term of any required coverage, and otherwise upon request. Tenant shall require all policies of insurance required under this Exhibit to contain a provision that the company writing said policy will give Landlord 30' days' prior written notice of any cancellation or lapse of the effective date or any reduction in the amounts of such insurance. Tenant shall require the Contractor to provide copies of policies required under this Exhibit if requested.

[*Remainder of page intentionally left blank*]

**EXHIBIT J**

**ENVIRONMENTAL QUESTIONNAIRE AND DISCLOSURE STATEMENT**

The purpose of this form is to obtain information regarding the use of hazardous substances on the Premises. Tenant should answer the questions as they relate to proposed operations on the Premises and should update any information previously submitted. If additional space is needed to answer the questions, you may attach separate sheets of paper to this form.

**1. GENERAL INFORMATION**

Name of Responding Company: _____ _____

Check the Applicable Status:

Prospective Tenant ____ Existing Tenant _____

Mailing Address: _____

Contact Person and Title: _____

Telephone Number: (___) _____

Address of Premises: _____

Length of Lease Term: _____ years with ____ ____ year extension options

Described the proposed operations to take place on the Premises, including principal products manufactured or services to be conducted.

**2. STORAGE OF HAZARDOUS MATERIALS**

2.1 Will any hazardous materials be used or stored on-site?

Wastes Yes ____ No ____
Chemical Products Yes ____ No ____

2.2 Attach the list of any hazardous materials to be used or stored, the quantities that will be on-site at any time, and the location and method of storage (e.g., 55 gallon drums on concrete pad).

**3. STORAGE TANKS & SUMPS**

3.1 Is any above or below ground storage of gasoline, diesel, or other hazardous substances in tanks or sumps proposed or currently conducted on the Premises?

Yes ____ No ____

If yes, describe the materials to be stored, and the type, size and construction of the sump or tank. Attach copies of any permits obtained for the storage of such substances.

3.2 Have any of the tanks or sumps been inspected or tested for leakage?

Yes ____ No ____

If so, attach the results.

3.3 Have any spills or leaks occurred from such tanks or sumps?

Yes ____ No ____

Is so, describe.

3.4 Were any regulatory agencies required to be notified of the spill or leak and did such required notification occur?

Yes ____ No ____

If so, attach copies of any spill reports filed, any clearance letters or other correspondence from regulatory agencies relating to the spill or leak.

3.5 Have any underground storage tanks or sumps been taken out of service or removed?

Yes ____ No ____

If yes, attach copies of any closure permits and clearance obtained from regulatory agencies relating to closure and removal of such tanks.

**4. SPILLS**

4.1 During the past year, have any spills occurred on the Premises?

Yes ____ No ____

If so, please describe the spill and attach the results of any testing conducted to determine the extent of such spills.

4.2 Were any agencies required to be notified in connection with such spills and did such notification occur?

Yes ____ No ____

If so, attach copies of any spill reports or other correspondence with regulatory agencies.

4.3 Were any clean-up actions undertaken in connection with the spills?

Yes ____ No ____

If so, briefly describe the actions taken. Attach copies of any clearance letters obtained from any regulatory agencies involved and the results of any final soil or groundwater sampling done upon completion of the clean-up work.

**5. WASTE MANAGEMENT**

5.1 Has your company been issued an EPA or state Hazardous Waste Generator I.D. Number?

Yes ____ No ____

5.2 Has your company filed any required report as a hazardous waste generator?

Yes ____ No ____

If so, attach a copy of the most recent report filed.

5.3 Attach the list of the hazardous waste, if any, generated or to be generated at the Premises, its hazard class and the quantity generated on a monthly basis.

5.4 Describe the method(s) of disposal for each waste. Indicate where and how often disposal will take place.

_____.

5.5 Indicate the name of the person(s) responsible for maintaining copies of hazardous waste manifests completed for off-site shipments of hazardous waste. _____

5.6 Is any treatment or processing of hazardous wastes currently conducted or proposed to be conducted at the Premises:

Yes ____ No ____

If yes, please describe any existing or proposed treatment methods. _____

Attach copies of any hazardous waste permits or licenses issued to your company with respect to its operations on the Premises. _____

**6. WASTEWATER TREATMENT/DISCHARGE**

6.1 Do you discharge wastewater to:

_____ storm drain? _____ sewer?

_____ surface water? _____ no industrial discharge

6.2 Is your wastewater treated before discharge?

Yes ____ No ____

If yes, describe the type of treatment conducted. _____

6.3 Attach copies of any wastewater discharge permits issued to your company with respect to its operations on the Premises. _____

**7. AIR DISCHARGES**

7.1 Do you have any air filtration systems or stacks that discharge into the air?

Yes ____ No ____

7.2 Do you operate any of the following types of equipment, or any other equipment requiring an air emissions permit?

_____ Spray booth
_____ Dip tank
_____ Drying oven
_____ Incinerator
_____ Other (Please Describe)
_____ No Equipment Requiring Air Permits

7.3 Are air emissions from your operations monitored?

Yes ____ No ____

If so, indicate the frequency of monitoring and a description of the monitoring results. _____

Attach copies of any air emissions permits pertaining to your operations on the Premises. _____

**8. HAZARDOUS MATERIALS DISCLOSURES**

8.1 Does your company handle hazardous materials in a quantity equal to or exceeding an aggregate of 500 pounds, 55 gallons, or 200 cubic feet?

Yes ____ No ____

8.2 Has your company prepared a hazardous materials management plan ("business plan") pursuant to County Fire Department requirements?

Yes ____ No ____

If so, attach a copy of the business plan.

8.3 Describe the procedures followed to comply with OSHA Hazard Communication Standard requirements.

_____.

**9. ENFORCEMENT ACTIONS, COMPLAINTS**

9.1 Has your company even been subject to any agency enforcement actions, administrative orders, or consent decrees?

Yes ____ No ____

If so, describe the actions and any continuing compliance obligations imposed as a result of these actions.

9.2 Has your company even received requests for information, notice or demand letters, or any other inquiries regarding its operations?

Yes ____ No ____

9.3 Have there ever been, or are there now pending, any lawsuits against the company regarding any environmental or health and safety concerns?

Yes ____ No ____

9.4 Has an environmental audit even been conducted at your company's current facility?

Yes ____ No ____

If so, discuss the results of the audit. _____

9.5 Have there been any problems or complaints from neighbors at the company's current facility?

Yes ____ No ____

If so, describe the problems or complaints. _____

Company _____

By:_____
Title:_____
Date:_____

EXHIBIT J-5

**Environmental Questionnaire**

**LIST OF HAZARDOUS MATERIALS TO BE USED OR STORED ON THE PREMISES**

Tenant shall provide to Landlord, no later than the Commencement Date, a list of Hazardous Materials that Tenant shall use at the Premises in connection with Tenant's operations within the Premises.

**EXHIBIT K**

**LOCATION AND SIZE OF CELL TOWER EQUIPMENT**

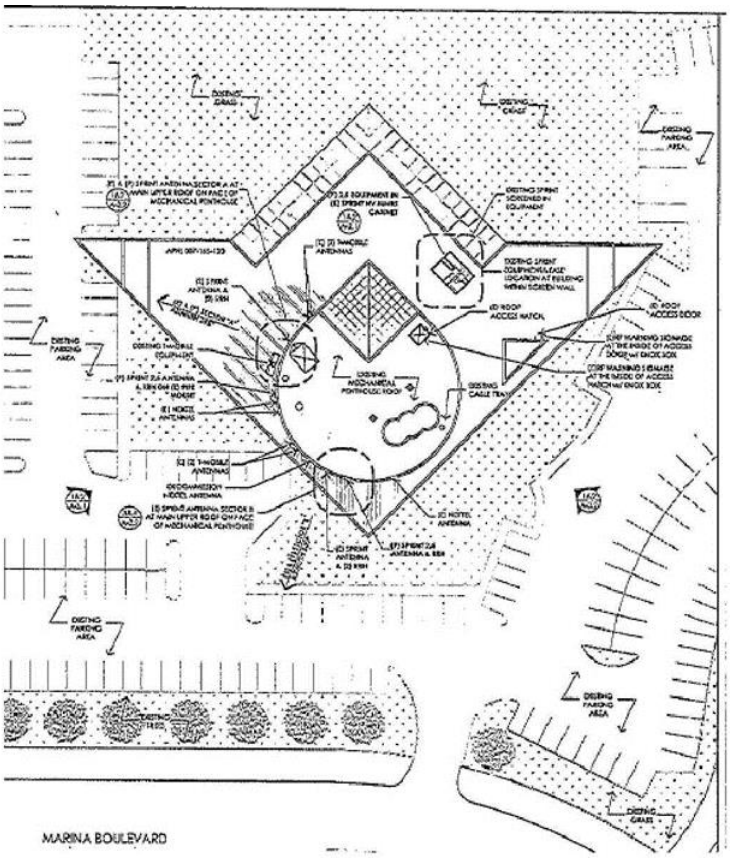


EXHIBIT K-1

**EXHIBIT L**

**WELLS FARGO - LETTER OF CREDIT**

WELLS FARGO

## Application for Irrevocable Standby Letter of Credit

To: Wells Fargo Bank, National Association  Issuing Location: ☐ North Carolina ☐ California

*Please type clear information in the boxes below. Applications that are illegible may be returned.*

| Date: (MM/DD/YY) | For Wells Fargo Bank Use Only | |
|---|---|---|
| 11/2/2017 | Letter of Credit No. | Activity Reference No. |

**The Applicant(s) signing below hereby request that Wells Fargo Bank, National Association ("Wells Fargo") issue in Wells Fargo's name an Irrevocable Standby Letter of Credit ("Credit") on substantially the terms below:**

| **Beneficiary**: *(Name and Address)* | **Advising Bank:** *(If left blank, Wells Fargo may select)* |
|---|---|
| MARINA BOULEVARD PROPERTY, LLC | |
| **Applicant/Obligor:** *(Name and Address)* | **Account Party:** (Name and Address of entity to be named in Credit if different from Applicant/Obligor) |
| SANGAMO THERAPEUTICS, INC.<br>7000 Marina Boulevard, Brisbane, California 94005 | |

**Amount** *(in figures)*: $3,500,000.00  *(in words)*: Three Million Five Hundred Thousand Dollars

**Currency** *(in USD unless otherwise specified)*: USD

**Availability**: Unless otherwise specified herein, the Credit is to be available for presentation on or before the Expiration Date (1) with Wells Fargo's issuing office by payment of draft(s) drawn at sight on Wells Fargo or (2) at Wells Fargo's option, with any bank(s) or with a bank nominated by Wells Fargo by negotiation of draft(s) drawn at sight on Wells Fargo or (3) at Wells Fargo's option, with a bank nominated by Wells Fargo by payment of draft(s) drawn at sight on the nominated bank.

**Expiration Date:** _____ ***(MM/DD/YY format, initial expiration date if automatically extending)***, or ☐ Expire one year from Issue Date

☒ Expiration Date to be automatically extended ***(Check one box below)***

☒ Annually on the day and month anniversary of the Expiration Date ☐ Annually on _____ ***(MM/DD)***

☐ Every _____ calendar days ☐ Every _____ months

With 30 days notification of non-extension and a Final Expiration Date of 7/16/29 ***(MM/DD/YY)***

**Available By:** *(check and complete only one of the following)*

☒ **A statement worded as follows indicating it is signed by the Beneficiary (if a person) or its authorized officer:** *(Please quote below the exact wording of the drawing statement.) (Attach additional signed sheet(s), if necessary, and label as attachments to this specific Application.)*

Beneficiary has the right by sight draft to draw, at its election, all or a portion of the proceeds of the Letter of Credit in the event (a) an Event of Default by Obligor occurs in the payment or performance of any of the terms, covenants or conditions of that certain lease between Obligor and Beneficiary dated as of the date hereof ("Lease"), including the payment of rent, or (b) Obligor fails to make any installment of rent as and when due beyond an applicable notice and cure period under the Lease, or (c) Beneficiary receives a non-renewal notice.

☐ **Issue the Credit substantially in the form and with the wording attached to this Application. The attached specimen is approved by each applicant.** *(Label the attached specimen as an attachment to this specific Application.)*

**Additional Requirements:** ☐ Partial drawings are prohibited *(if blank, partial drawings are permitted)*

☐ Multiple drawings prohibited *(if blank, multiple drawings are permitted)*

☒ Credit is transferable in its entirety. Transfer charges for account of ☒ Applicant ☐ Beneficiary

The Credit will be subject to the International Standby Practices of the International Chamber of Commerce ("ICC"), Publication 590

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("ISP98") or the ICC, Publication 600 ("UCP") or any subsequent version of either publication in effect and in use by Wells Fargo on the date the Credit is issued, as Wells Fargo shall determine in its sole discretion.

**Description of Standby Purpose** including goods description, country of origin, pricing as applicable:
Security Deposit (Lease)

**Patriot Act Notice:** U.S. Federal laws require all financial institutions to obtain, verify, and record information that identifies each person who opens an account. Issuing the Credit is considered to be opening an account and will require compliance with these Federal laws.

**Credit Requesting Issuance of Guarantee or Other Undertaking:** *(To be completed only if the Beneficiary is a bank or another financial institution and the Beneficiary is to issue its guarantee or other undertaking supported by the Credit.)*

Please request the Beneficiary to issue and deliver its _____ *[specify type of guarantee or other undertaking]* in favor of _____ for an amount not exceeding the amount specified above, effective immediately and related to _____ *[specify contract number or other pertinent reference]* to expire _____ *[specify an expiry date at least 15 days prior to the Credit expiry date indicated above]*. Applicant attaches the wording to be used for such guarantee or other undertaking, if available. If the wording is not available, the wording should be the Beneficiary's customary wording for such guarantee or undertaking, with the wording specifying a maximum amount and an expiration date. If the Credit is issued as support for a guarantee or other undertaking which the Credit's Beneficiary has issued or is to issue on behalf of Applicant, Applicant agrees that until Wells Fargo is released from its obligations under or in connection with the Credit by such Beneficiary, Applicant will remain liable, with respect to the Credit, to Wells Fargo under this Application and the Standby Letter of Credit Agreement Applicant has signed relating to the Credit, even though such liability may exceed the amount of the Credit or continue beyond the expiration date of the Credit.

**Transmission of Credit:** Please transmit the original of the Credit yourself or through a bank selected by you to the following:

☐ Beneficiary ☐ Applicant ☐ Other: _____

*By selecting a party other than the beneficiary, I acknowledge and understand the rights of the beneficiary under an issued Standby Letter of Credit are unchanged regardless of where the original has been delivered.*

**Applicant's Agreement and Signature:** *(Each party obligated either alone or jointly and severally with others to reimburse Wells Fargo with respect to the Credit must sign this Application below.)* EACH APPLICANT'S SIGNATURE BELOW AFFIRMS THAT (1) IT HAS FULLY READ AND AGREED TO, (2) IT WILL BE BOUND BY, AND (3) THE CREDIT WILL BE GOVERNED BY, THE TERMS OF THIS APPLICATION AND THE TERMS OF THE STANDBY LETTER OF CREDIT AGREEMENT SIGNED BY EACH APPLICANT IN FAVOR OF WELLS FARGO OR ANY OTHER AGREEMENT SIGNED BY EACH APPLICANT PURSUANT TO WHICH THE CREDIT IS ISSUED. THIS APPLICATION IS SIGNED BY EACH APPLICANT'S DULY AUTHORIZED REPRESENTATIVE(S) ON THE DATE SPECIFIED ABOVE.

| **Print or Type Name of Applicant:** SANGAMO THERAPEUTICS, INC. | | **Print or Type Name of Co-Applicant:** | |
|---|---|---|---|
| **Address:** 7000 Marina Boulevard, Brisbane, California 94005 | | **Address:** | |
| **Authorized Signature (and Title, if applicable):** | | **Authorized Signature (and Title, if applicable):** | |
| **Authorized Signature (and Title, if applicable):** | | **Authorized Signature (and Title, if applicable):** | |
| **Email Address (MANDATORY):** mcobo@sangamo.com | | **Email Address (MANDATORY):** | |
| **DDA for Fees:** | **Phone Number:** 510-970-7868 | **Applicant Contact:** | **Phone Number:** |

***For Wells Fargo Bank Use Only***

***Credit Issuance Has Been Approved in Accordance With Wells Fargo's Credit Policies and Procedures***

| Approving Officer's Signature | Approving Officer's Name *(Print)* | Approving Officer's Office *(Print)* | AU | MAC |
|---|---|---|---|---|
| | | | | |

| Approving Officer's Telephone: | Approving Officer's Email: | Date |
|---|---|---|
| | | |

☐ The Credit *appears* to support an obligation to make a monetary payment and should *most likely* be classified as a ***"financial obligation"***.

☐ The Credit ***appears not*** to support an obligation to make a monetary payment and should *most likely* be classified as a ***"performance obligation"***.

☐ The Standby Letter of Credit requested above is a syndicated transaction and Applicant has confirmed that the Standby Letter of Credit meets the expiration date requirements set forth in Section __ of the relevant syndicated credit agreement. I confirm that I have communicated the information regarding this transaction to the Wells Fargo Syndications Group as required by Wells Fargo policy.

For any questions regarding this transaction, please contact ☐ Approver ☐ Applicant directly ☐ Other: _____

| AFS BOOKING INTERFACE: YES ☐ NO ☐ | Standalone: YES ☐ NO ☐ | Obligor #: | Commitment #: | Collateral | BQR | CQR | Purpose Code | NAIC |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |



EXHIBIT J-2

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| LIQ BOOKING ☐YES ☐NO | LIQ CID: | LIQ FACILITY ID: | LUCAS BOOKING ☐YES ☐NO | | LUCAS CLIENT NO. | | LUCAS LOAN NO. | |
| Exception Pricing: ☐Commission P.A. ____ | | | ☐Servicing Fees ____ | | | | | |
| SPECIAL INSTRUCTIONS: *(Indicate provisions applicable to the Credit different from those on Applicant's Relationship Management Instructions Form)* | | | | | | | | |

EXHIBIT J-3

151177627 v8

**EXHIBIT M**

**ROFO TO PURCHASE**

(1) **Right of First Offer to Purchase**. If Landlord desires to sell, convey or transfer its fee interest in the Building to a third party during the period commencing on the Commencement Date and expiring on the third (3rd) anniversary of the Commencement Date ("**ROFO Period**"), subject to compliance with the California Subdivision Map Act to create a separate legal parcel for the Building, Landlord hereby grants Tenant a one-time right of first offer to purchase the Building during the ROFO Period ("**Right of First Offer**") pursuant to the terms and provisions of the Right of First Offer Agreement attached hereto as Exhibit M-1 ("**ROFO Agreement**"), subject to the following conditions: (a) Tenant is currently leasing and physically occupying 87,695 rentable square feet in the Building (including any Permitted Transfers); (b) Tenant has not assigned the Lease nor subleased any portion of the Premises (except for Permitted Transfers); (c) the Lease is then in full force and effect and no Event of Default by Tenant has occurred and is continuing at the time Tenant exercises its Right of First Offer; (d) the Right of First Offer is personal to Tenant and may not be exercised or assigned, voluntarily or involuntarily, by, or to, any person or entity other than Tenant; (e) the Right of First Offer and its exercise thereof by Tenant shall be governed by the terms and conditions of the ROFO Agreement; (f) the original Landlord named in this Lease owns the fee interest in the Building at the time the Right of First Offer is exercised. The Parties shall execute the ROFO Agreement concurrently with this Lease.

(2) Tenant's rights under this Exhibit M shall terminate if (1) this Lease or Tenant's right to possession of the Premises is terminated, (2) Tenant assigns any of its interest in this Lease or sublets any portion of the Premises to any party (except for Permitted Transfers), or (3) Tenant fails to timely exercise its option under this Exhibit M, time being of the essence with respect to Tenant's exercise thereof.

**EXHIBIT M-1**

**ROFO AGREEMENT**

THIS RIGHT OF FIRST OFFER AGREEMENT (this "**Agreement**") is entered into this ____ day of _____, 2017, by and between **MARINA BOULEVARD PROPERTY, LLC**, a Delaware limited liability company ("**Owner**"), and **SANGAMO THERAPEUTICS, INC.**, a Delaware corporation ("**Offeree**"). Owner and Offeree are sometimes hereinafter individually or collectively called a "**Party**" or the "**Parties**".

**RECITALS**

A. Offeree has leased from Owner pursuant to that certain Lease Agreement dated November 3, 2017 between Offeror and Offeree ("**Lease**") certain real property located in the City of Brisbane, State of California, which is more particularly described on Exhibit A attached hereto and the improvements located thereon (collectively, the "**Property**").

B. As an inducement to Offeree to execute the Lease, Owner has agreed not to "**Transfer**" (as defined below) the Property to a third party during the period commencing on the Commencement Date and expiring on the third (3rd) anniversary of the Commencement Date ("**ROFO Period**") without first providing Offeree with a right of first offer ("**ROFO**") to purchase the Property, subject to the conditions set forth in Exhibit M to the Lease.

C. This Agreement is subject and subordinate to any Deed of Trust now or hereafter existing on the Property.

D. Initially capitalized terms used herein without definition shall have the meaning set forth in the Lease.

E. Any sale shall be subject to compliance with the California Subdivision Map Act to create a separate legal parcel for the Building.

**AGREEMENT**

NOW, THEREFORE, in consideration of the foregoing and other valuable consideration, the receipt of which are hereby acknowledged, Owner hereby grants to Offeree a right of first offer for the Property as follows:

**Section 1.** **Grant of Right of First Offer**.

**1.1.** **Transfer**. During the ROFO Period, Owner shall not Transfer (as hereinafter defined) its fee interest in the Property (hereinafter, the "**Premises**") except in accordance with the provisions of this Agreement, subject to the conditions set forth in Exhibit M to the Lease.

(a) Procedure. Owner shall give notice to Offeree (the "**Offer Notice**") when Owner desires to Transfer the Premises to a third party (i.e., whether or not Owner has received a third party offer it elects to pursue). The Offer Notice shall describe Owner's proposed Transfer and all of the economic and non-economic terms and conditions applicable to Offeree's purchase of the Premises. For purposes of this Agreement, the term "**economic terms**" shall be defined to mean only those economic terms that are to be accounted for on a final escrow closing/settlement statement. The "**non-economic terms**" shall be on terms as set forth in the form purchase and sale agreement ("**Purchase**

**Agreement**") to be agreed upon by the parties hereto in their commercially reasonable determination (collectively, the "**Offer Terms**").

(b) Procedure for Acceptance. Within ten (10) business days after delivery of the Offer Notice (the "**Offer Election Date**"), Offeree shall deliver written notice to Owner ("**Offeree's Election Notice**") pursuant to which Offeree shall elect either to (i) purchase the Premises pursuant to the Offer Terms set forth in the Offer Notice, or (ii) decline to purchase the Premises, in which event this Agreement and the ROFO set forth herein and in the Lease shall thereupon terminate and be of no further force or effect (unless reinstated pursuant to the below described terms). In the event Offeree elects to purchase the Premises, Offeree shall deliver with Offeree's Election Notice to Owner a signed Purchase Agreement with the Offer Terms set forth. If Offeree does not so respond in writing to Owner's Offer Notice by the Offer Election Date, Offeree shall be irrevocably deemed to have elected the option described in clause (ii) above, in which event Offeree's ROFO set forth herein and in the Lease shall thereupon terminate, subject to reinstatement pursuant to Section 1.2 below.

(c) Owner's Response. If Offeree elects to purchase the Premises, then within five (5) business days after receipt of Offeree's Election Notice, Owner shall return to Offeree and Escrow Holder as identified in the Purchase Agreement a signed counterpart of the Purchase Agreement with the Offer Terms incorporated therein. If the parties have not mutually executed and delivered the Purchase Agreement within thirty (30) days following Offeree's Election Notice, or if Offeree does not elect to purchase the Premises, Owner may, at its election, and subject to the terms of this paragraph, during the twelve (12) month period following the date of the Offer Notice, enter into a letter of intent or purchase and sale agreement to sell and thereby Transfer the Premises described in the Offer Notice to any entity at such economic and non-economic terms as are acceptable to Owner and such third party purchaser without any Material Modification (as described in Section 1.2 below) to the Offer Terms. If Owner does not Transfer the Premises described in the Offer Notice within the above described twelve (12) month period (and subject to Section 1.2 below), then Owner shall submit to Offeree a new Offer Notice with respect to the Premises prior to selling the Premises upon terms and conditions set forth in the new Offer Notice.

(i) Nothing herein shall prevent or restrict Offeree from making a subsequent offer for the Premises or from participating as a bidder in Owner's marketing of the Premises. Owner shall use its reasonable efforts, without any liability for failure to do so, to furnish Offeree with the marketing information related to the Premises.

**1.2. Material Modification**. For purposes of this Agreement, a Material Modification shall mean any decrease of more than ten percent (10%) in the economic terms (or change in cost allocations of the Purchase Agreement that would have the same effect). If the Owner's proposed Transfer is at economic terms of ninety percent (90%) or more than proposed Offer Terms to Offeree set forth in the Offer Notice, Owner shall have no obligation to submit such Transfer to Offeree. If Owner desires to Transfer and such Transfer contains a Material Modification, then prior to execution of a letter of intent or purchase and sale agreement, whichever occurs first, Owner shall provide Offeree with a written notice of the revised economic terms. Offeree shall have five (5) business days to accept such revised terms by written notice to Owner. Five (5) business days shall mean by 5:00 p.m. Pacific time on the fifth (5th) business day following the submission of such revised economic terms to Offeree.

**1.3. Termination of Right of First Offer**. If pursuant to this Agreement Owner completes the Transfer of the Premises described in the Offer Notice to a third party, then this Agreement and the ROFO set forth in the Lease shall terminate as to the Premises described in the Offer Notice. This Agreement shall also terminate if Offeree fails to close the purchase pursuant to the Purchase Agreement executed by Offeree and Owner, unless excused thereunder including as a result of Owner's default.

**Section 2.** **Transfer Defined**. As used in this Agreement, the term "**transfer**" or "**Transfer**" shall be defined to mean any sale, or other conveyance of fee title, in the Premises to a third party.

**Section 3.** **Assignment**. Offeree and Owner may not voluntarily or by operation of law assign or transfer any right, interest or obligation hereunder without the other party's express prior written consent, which consent may be given or withheld in such party's sole discretion for any reason whatsoever.

**Section 4.** **Notices**. Any notice which a Party is required or may desire to give another Party shall be in writing and may be delivered (1) personally, (2) by United States registered or certified mail, postage prepaid, or (3) by Federal Express or other reputable courier service regularly providing evidence of delivery (with charges paid by the Party sending the notice). Any such notice to a Party shall be addressed at the address set forth below (subject to the right of a Party to designate a different address for itself by notice similarly given). Service of any such notice or other communications so made shall be deemed effective on the day of actual delivery (whether accepted or refused), as shown by the addressee's return receipt if by certified mail, and as confirmed by the courier service if by courier; provided, however, that if such actual delivery occurs after 5:00 p.m. (local time where received) or on a non-business day, then such notice or demand so made shall be deemed effective on the first business day after the day of actual delivery. Except as expressly provided otherwise in this Agreement, no communications via facsimile or electronic mail shall be effective to give any notice, request, direction, demand, consent, waiver, approval or other communications hereunder. The Parties' addresses for notices are as follows:

If to Owner:

Marina Boulevard Property, LLC
c/o Westport Capital Partners LLC
2121 Rosecrans Avenue
Suite 4325
El Segundo, California 90245
Attention: Eric Clapp, Managing Director

With Copy to:

DLA Piper LLP (US)
550 South Hope Street, Suite 2300
Los Angeles, California 90071
Attention: Jackie K. Park, Esq.
Telephone: (213) 330-7743

If to Offeree:

Sangamo Therapeutics, Inc.
7000 Marina Boulevard
Brisbane, CA 94005
Attention: Director of Legal

**Section 5.** **Dispute Costs**. If either party commences litigation against the other for the specific performance of this Agreement, for damages for the breach hereof or otherwise for enforcement of any remedy hereunder, the parties hereto agree to and hereby do waive any right to a trial by jury and, in the event of any such commencement of litigation, the prevailing party shall be entitled to recover from the

other party such costs and reasonable attorneys' fees as may have been incurred. Whenever the term is used in this Agreement, the term "attorneys' fees" (and similar references in this instrument to recovery of costs for use of legal counsel) include, without limitation, all attorneys' and paralegals' fees and expenses, whether in an action or proceeding, upon appeal therefrom, or in connection with any petition for review or action for rescission, or in connection with any other action to interpret or enforce any of the provisions of this Agreement. This provision is separate and several and shall survive merger of this provision into any judgment on this Agreement.

**Section 6.** **Survival**. This Agreement and the provisions hereof shall inure to the benefit of and be binding upon the Parties to this Agreement and their respective successors, heirs and permitted assigns.

**Section 7.** **Entire Agreement**. This Agreement, together with the other written agreements referred to herein and Exhibit A attached hereto, is intended by the Parties to be the final expression of their agreement with respect to the subject matter hereof, and is intended as the complete and exclusive statement of the terms of the agreement between the Parties.

**Section 8.** **Modifications**. No modification of this Agreement shall be effective unless set forth in writing and signed by both Parties.

**Section 9.** **Severability**. If any provision of this Agreement, or the application thereof, shall for any reason and to any extent be invalid or unenforceable, the remainder of this Agreement and application of such provision to other circumstances, shall be interpreted so as best to reasonably effect the intent of the Parties hereto.

**Section 10.** **Waiver**. The waiver by either Party of any breach by the other Party of any term, covenant or condition herein contained or either Party's failure or delay to exercise any right, power or privilege hereunder will not be deemed to be a waiver thereof or any subsequent breach, failure or delay.

**Section 11.** **Execution; Counterparts**. This Agreement may be executed in two (2) or more counterparts, all of which together as to the same such document shall constitute one and the same agreement.

**Section 12.** **Interpretation; Governing Law**. This Agreement shall be construed as if prepared by both Parties. Accordingly, any rule of law or legal decision that would require interpretation of any ambiguities in this Agreement against the Party that has drafted it is not applicable and is waived. This Agreement shall be construed, interpreted and governed by the laws of the State of California and the laws of the United States of America prevailing in California.

**Section 13.** **Further Assurances**. Each Party shall execute such further documents and take such further actions as may be necessary or appropriate to consummate the transaction contemplated by this Agreement.

**Section 14.** **Time of the Essence**. Time is of the essence of this Agreement and each and every term and provision hereof.

**Section 15.** **No Third Party Beneficiaries**. Except as otherwise expressly set forth herein, Owner and Offeree do not intend, and this Agreement shall not be construed, to create a third-party beneficiary status or interest in, nor give any third-party beneficiary rights or remedies to, any other person or entity not a party to this Agreement.

**Section 16.** **Memorandum**. This Agreement shall not be recorded or placed of public record. Notwithstanding the foregoing, Owner and Offeree agree that, within five (5) business days following the other party's request therefor, to execute and deliver to the requesting party, a memorandum of this Agreement, acceptable to both parties, which may, at the requesting party's option, be recorded in the public records of the county in which the Premises is located; provided, however, that the form of memorandum must include a provision pursuant to which Owner can unilaterally record an effective termination thereof upon the expiration thereof and that such offer is contingent upon satisfaction of certain conditions.

[Signatures on following page]

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of the date first above written.

OWNER:

**MARINA BOULEVARD PROPERTY, LLC**,
a Delaware limited liability company

By:

Print Name:

Title:

OFFEREE:

**SANGAMO THERAPEUTICS, INC**.,
a Delaware corporation

By:

Print Name:

Title:

By:

Print Name:

Title:

**EXHIBIT A TO ROFO AGREEMENT**

**LEGAL DESCRIPTION OF THE PROPERTY**

**EXHIBIT N**

**ESCROW AGREEMENT**

SVB Silicon Valley Bank
A Member of SVB Financial Group

Escrow Agreement
(Single Depositor)

**Depositor:** Sangamo Therapeutics, Inc.

**Beneficiary:** Marina Boulevard Property, LLC

This Escrow Agreement ("Agreement") is entered into among Silicon Valley Bank ("Escrow Agent"), having its principal place of business at 3003 Tasman Drive, Santa Clara, CA 95054, Depositor and Beneficiary, collectively referred to herein as "Parties."

Escrow Account #: _____
(Assigned upon receipt of signed escrow agreement)

**Purpose of Escrow (the "Transaction"):**
(Please provide a brief description of transaction (e.g.) asset purchase agreement dated MM/DD/YY)

Tenant contribution pursuant to lease signed between the depositor and beneficiary dated as of November 3, 2017.

Depositor and Beneficiary desire to establish this Agreement for the purpose of facilitating and regularizing the receipt of monies due, and disbursement of those monies in connection with the Transaction (as described above). The Escrow Agent will receive funds due and disburse the funds per instructions described in this Escrow Agreement.

The parties hereby agree as follows:

1. **Appointment of the Escrow Agent**. Depositor and Beneficiary do hereby appoint, constitute and designate Silicon Valley Bank as their Escrow Agent for the purposes set forth herein, and the Escrow Agent accepts the agency created under this Agreement and agrees to perform the obligations as stated herein.

2. **Conflict with Other Agreements**. Depositor and Beneficiary agree that this Agreement supersedes any conflicting terms contained in any other agreement or understanding pertaining to the monies.

3. **Deliveries to Escrow Agent**. The Depositor shall deliver to the Escrow Agent via wire transfer or book transfer an initial deposit in the sum of $ 8,769,500. Depositor and Beneficiary agree that additional funds may be deposited into the Escrow account during the term of the Escrow agreement. Escrow Agent shall acknowledge receipt of such amount(s) and agrees to hold and disburse said amount(s) (collectively, the "Escrow Amount") in accordance with the terms and conditions of this Escrow Agreement and for the uses and purposes stated herein. Such amount(s) shall be delivered into escrow in accordance with the instructions in Exhibit B.

4. **Investment of Funds**. All such funds will be deposited to the Escrow Account, which shall be a non-interest bearing account.

5. **Responsibilities of Escrow Agent**. The duties and responsibilities of the Escrow Agent shall be those expressly set forth in this Agreement. No implied duties of the Escrow Agent shall be read into this Agreement and the Escrow Agent shall not be subject to, or obligated to recognize any other agreement between or direction or instruction of, any or all of the parties hereto. The Escrow Agent shall also not be responsible for the duties of Depositor and Beneficiary to each other.

6. **Disbursements**.

   6.1 Depositor and Beneficiary agree that from time to time they shall deliver to the Escrow Agent joint written instructions, substantially in the form of Exhibit C hereto executed by both the Depositor and Beneficiary ("Disbursement Instructions") requesting disbursement of any or all portion of funds to the Depositor and/or Beneficiary. Escrow Agent shall release requested amount, less any fees payable in connection with this Escrow, to the Depositor and/or Beneficiary in accordance with wire instructions contained therein. Depositor and Beneficiary anticipate all funds will be disbursed by **December 31, 2018**. Any funds remaining in the Escrow Account after such date shall be returned to the Depositor.

6.2 Any requests to extend the date noted in Section 6.1 require the written consent of both Depositor and Beneficiary. Such request is not effective until confirmed in writing by Escrow Agent.

7. **Fees**. The fees of the Escrow Agent for services rendered in connection with this Escrow Agreement are outlined in Exhibit A. It is the responsibility of the Designated Party (Exhibit A) to pay the required fees to the Escrow Agent. Any fees not paid by the Designated Party will be deducted from the Escrow Amount prior to disbursement of the funds.

8. **Instructions and Directions to Agent**. The Escrow Agent is authorized, in its sole discretion, to disregard any and all notices or instructions given by any person or entity, except notices or instructions as provided for in this Agreement (Disbursement Instructions) and orders or process of any court entered or issued with or without jurisdiction. If any property subject hereto is at any time attached, garnished, or levied upon under any court order, or in case the payment, assignment, transfer, conveyance or delivery of any such property shall be stayed or enjoined by any court order, or in case any order, judgment, or decree shall be made or entered by any court affecting such property or any party hereto, then in any such events, the Escrow Agent is authorized, in its sole discretion, to rely upon and comply with any such order, writ, judgment or decree with which it is advised by legal counsel of its own choosing, and if it complies with any such order, writ, judgment or decree it shall not be liable to any other party hereto or to any other person, firm or corporation by reason of such compliance even though such order, writ, judgment or decree may be subsequently reversed, modified, annulled, set aside, or vacated.

9. **Agent's Right to Rely on Genuineness of Instrument**. The Escrow Agent may rely, and shall be protected in acting or refraining from acting, upon any instrument furnished to it hereunder and believed by it to be genuine and believed by it to have been signed or presented by the appropriate party or parties described in this Agreement. The Escrow Agent shall not be responsible nor liable in any respect on account of the lack of authority, or lack of right of any such person executing, or delivering or purporting to execute, deposit or deliver any such document, funds or endorsement of this Agreement or on account of or by reason of forgeries, or false representations.

10. **Indemnity and Hold Harmless of Bank**. Depositor and Beneficiary hereby agree to indemnify and hold harmless Escrow Agent, its affiliates and their respective directors, officers, agents and employees ("Indemnified Persons") against any and all claims, causes of action, liabilities, lawsuits, demands and damages (each, a "Claim") arising from this Agreement, including without limitation, any and all court costs and reasonable attorneys' fees, in any way related to or arising out of or in connection with this Agreement or any action taken or not taken pursuant hereto, including, but not limited to, any Claims arising as a result of Escrow Agent's adherence to instructions from Depositor and Beneficiary; provided that no Indemnified Person shall be entitled to be indemnified to the extent that such Claims result from an Indemnified Person's gross negligence or willful misconduct. This provision shall survive the termination of this Agreement.

11. **Disagreements**. In the event of any disagreement between the parties and/or any other person, resulting in an adverse claim or demand being made in connection with this Agreement, Escrow Agent shall not become liable to the parties for damages or interest for Escrow Agent's failure or refusal to comply with conflicting or adverse demands, and Escrow Agent may continue to refuse to act until the disagreement is resolved by the parties or by the court in which the Escrow Agent files a request for interpleader.

12. **Relationship of the Parties**. Other than the escrow agency described herein, nothing in this Agreement shall create any other agency or fiduciary relationship between Depositor, Beneficiary and Escrow Agent.

13. **Waiver**. **NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT OR ANYWHERE ELSE, DEPOSITOR AND BENEFICIARY EACH WAIVE, AND THEY AGREE THAT THEY SHALL NOT SEEK FROM ESCROW AGENT UNDER ANY THEORY OF LIABILITY (INCLUDING WITHOUT LIMITATION ANY THEORY IN TORT), ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES ARISING IN CONNECTION WITH THIS AGREEMENT.**

14. **Jury Trial Waiver**. **DEPOSITOR, BENEFICIARY AND ESCROW AGENT EACH WAIVE THEIR RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, OR ANY CONTEMPLATED TRANSACTION HEREIN, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR ALL PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.**

15. **Governing Law and Jurisdiction**. The parties hereto agree that this Agreement shall be governed exclusively under and in accordance with the laws of the State of California. All parties hereto each submit to the exclusive jurisdiction of the State and Federal courts in Santa Clara County, California.

16. **Attorneys' Fees, Costs and Expenses**. In any action or proceeding between Escrow Agent and any other party to this Agreement, the prevailing party will be entitled to recover its reasonable attorneys' fees and other reasonable costs and expenses incurred, in addition to any other relief to which it may be entitled.

17. **Term and Termination**. Unless terminated earlier, this Agreement shall remain in effect until all amounts received by the Escrow Agent have been disbursed as provided herein above. In no case will the termination of this Agreement relieve the parties of their responsibility to pay any fees due to the Escrow Agent and payable under this Agreement.

18. **Resignation of the Agent**. The Agent reserves the right to resign as Escrow Agent at any time by giving thirty days advance written notice to Depositor and Beneficiary. Within thirty days after receipt of said notice of resignation, Depositor and Beneficiary shall inform the Escrow Agent of a successor escrow agent to which the Escrow Agent shall distribute the property then held hereunder, less its fees, costs and expenses (including counsel fees and expenses). If Depositor and Beneficiary are unable to appoint a successor escrow agent within thirty days and there is property held under this Agreement, then Depositor and Beneficiary shall cause the property to be disbursed in accordance with Section 6.

19. **Amendment**. The provisions of this Agreement may only be altered, modified or amended by instrument in writing duly executed by all of the Parties hereto.

20. **Counterparts**. This Agreement may be executed in any number of counterparts, each of which shall be deemed as original of one and the same document.

21. **Notices**. Any notice or other communication shall be in writing and shall be sent by United States mail, overnight courier, facsimile or electronic mail to the noted addresses set forth below the parties' signatures. For all purposes hereof any notice so mailed shall be as effectual as though served upon the person of the party to whom it was mailed at the time of the deposit in the United States mail, faxed or electronic mail.

22. **Business Days**. Unless otherwise specified herein, all "days" referred to in this Agreement shall be business days. Whenever under the terms hereof the time giving a notice or performing an act falls upon a Saturday, Sunday or federal holiday, such time shall be extended to the next following business day.

**THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK**

**The Depositor and Beneficiary each state that they have read the foregoing Agreement, understand and agree to it, and acknowledge receipt of a copy of the same. The Depositor and the Beneficiary further acknowledge that this Agreement shall not be effective until signed by the Escrow Agent,**

**IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year of the last signature below**

| **Depositor.** | **Beneficiary:** |
|---|---|
| **By:** /s/ Kathy Yi | **By:** _____ |
| **Name & Title:** Kathy Yi, CFO | **Name & Title:** _____ |
| **Date:** 11/2/2017 | **Date:** _____ |
| **Address for Notices:** | **Address for Notices:** |
| **Attn:** Kathy Yi | **Attn:** _____ |
| 501 Canal Blvd. | _____ |
| Suite A | _____ |
| Richmond, CA 94804 | _____ |
| **Tel:** _____ | **Tel:** _____ |
| **Fax:** _____ | **Fax:** _____ |
| **Email:** _____ | **Email:** _____ |

**Escrow Agent:**
**Silicon Valley Bank**

**By:** _____
**Name & Title:** _____
**Date:** _____

**Address for Notices:**
**Attn: Deposit Escrow Services**
**Silicon Valley Bank**
**3003 Tasman Drive**
**Santa Clara, CA 95054**

**Tel:** _____
**Fax: (408) 728-9746**
**Email: escrowservices@svbank.com**

**Exhibit A**

**Fees Schedule**

In accordance with Section 7 of this Agreement, the following fees are due to the Escrow Agent:

| Type of Fee: | Amount: | Due: | Responsible Party: |
|---|---|---|---|
| Escrow Fee*: | $3,500 (non-refundable)i | Payable at the time the escrow account is established | Sangamo Therapeutics |
| Renewal Fee: (if applicable) | $1,750 (non-refundable) | Payable on the first and subsequent anniversaries of escrow account | Sangamo Therapeutics |
| Disbursement Fees: | ➢ $25.00 — wire transfers to SVB accounts | Per disbursement per payee. | |
| | ➢ $65.0 — wire transfers to U.S. banks | Payable at the time of disbursement. | Sangamo Therapeutics |
| | ➢ $80.00 — wire transfer to non U.S. banks | | |

* An additional fee may be charged if revisions to the agreement are requested (you will be notified if the additional fee applies at the time of the request)

**Exhibit B**
**Delivery Instructions**

In accordance with Section 3 of this Agreement, all funds to be deposited to the Escrow Account should be delivered as follows:

**Remittance Via Wire Transfer:**

Account Name: [escrow account name] Escrow Account

Bank: Silicon Valley Bank

Account #: _____

ABA #: 121140399

Address: Silicon Valley Bank
3003 Tasman Drive
Santa Clara, CA 95054

**Exhibit C**

**Escrow Account Disbursement Instructions**

Silicon Valley Bank
Deposit Escrow Services
3003 Tasman Drive
Santa Clara, CA 95054

**Fax: (408) 728-9746**

Escrow Agreement dated:_____
Depositor: _____
Beneficiary: _____

This letter is delivered pursuant to Section 6 of the Escrow Agreement, by and among the Depositor, Beneficiary and Silicon Valley Bank as Escrow Agent. The Depositor and Beneficiary hereby instruct Escrow Agent to release funds from the Escrow Account to the party/parties via wire per below.

**$**_____

Name on Account: _____
Bank Name: _____
Account Number: _____
Bank ABA/Routing Number: _____
Reference: _____

**$**_____

Name on Account: _____
Bank Name: _____
Account Number: _____
Bank ABA/Routing Number: _____
Reference: _____

The undersigned has caused its duly authorized representative to execute this letter as of the date hereof.

Sincerely,

| **DEPOSITOR** | **BENEFICIARY** |
|---|---|
| By: _____ | By: _____ |
| Name & Title: _____ | Name & Title: _____ |
| Date: _____ | Date: _____ |

**EXHIBIT 10.40**

**[ * ] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 24B-2 OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED.**

# RESEARCH COLLABORATION AND LICENSE AGREEMENT

by and between

**PFIZER INC.**

and

**SANGAMO THERAPEUTICS, INC.**

**December 28, 2017**

**RESEARCH COLLABORATION AND LICENSE AGREEMENT**

This Research Collaboration and License Agreement (the "Agreement") is entered into as of December 28, 2017 (the "Effective Date"), by and between **Pfizer Inc.**, a corporation organized and existing under the laws of Delaware and having a principal place of business at 235 East 42nd Street, New York, NY 10017 ("Pfizer") and **Sangamo Therapeutics, Inc.**, a corporation organized and existing under the laws of Delaware and having a principal place of business at 501 Canal Blvd., Richmond, CA 94804 ("Sangamo"). Pfizer and Sangamo may each be referred to herein individually as a "Party" and collectively as the "Parties."

WHEREAS, Sangamo owns or otherwise controls certain patents, patent applications, technology, know-how, scientific and technical information and other proprietary rights and information relating to the identification, research and development of Compounds (as defined below);

WHEREAS, Pfizer has extensive experience and expertise in the development and commercialization of pharmaceutical and biopharmaceutical products;

WHEREAS, subject to the terms of this Agreement, Sangamo wishes to grant to Pfizer, and Pfizer wishes to receive from Sangamo, an exclusive license in the Field (as defined below) in the Territory (as defined below) under Sangamo's and its licensors' patents, patent applications, technology, know-how, scientific and technical information and other proprietary rights and information relating to Compounds and Products to use, research, develop, manufacture and commercialize Products;

WHEREAS, Pfizer and Sangamo wish to engage in collaborative pre-clinical research pursuant to the Research Plan (as defined below) to identify and develop Compounds for inclusion in Products (as defined below) to be advanced to clinical trials for further development and commercialization by Pfizer; and

WHEREAS, subject to the terms of this Agreement, Sangamo wishes to grant to Pfizer, and Pfizer wishes to receive from Sangamo, an exclusive license in the Field in the Territory to use, research, develop, manufacture and commercialize Products.

NOW THEREFORE, in consideration of the mutual promises and covenants set forth below and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereby agree as follows:

## ARTICLE 1
## DEFINITIONS

Unless the context otherwise requires, the terms in this Agreement with initial letters capitalized shall have the meanings set forth below:

**1.1** "Affiliate" means, with respect to any Person, any other Person that controls, is controlled by, or is under common control with, such Person. For purposes of this Agreement, a Person shall be deemed to control another Person if it owns or controls, directly or indirectly, at least fifty percent (50%) of the equity securities (or other ownership interests, by contract or otherwise) of such other Person entitled to vote in the election of directors (or, in the case that such other Person is not a corporation, for the election of the corresponding managing authority), or otherwise has the power to direct the management and policies of such other Person; *provided*, *however*, that where an entity owns a majority of the voting power necessary to elect a majority of the board of directors or other governing board of another entity, but is restricted from electing such majority by contract or otherwise, such entity will not be considered to be in control of such other entity until such time as such restrictions are no longer in effect. The Parties acknowledge that in the case of certain entities organized under the laws of certain countries outside the United States, the maximum percentage ownership permitted by law for a foreign investor may be less than fifty percent (50%), and that in such case such lower percentage will be substituted in the preceding sentence, provided that such foreign investor has the power to direct the management and policies of such entity.

**1.2** "Bankruptcy Event" means the occurrence of any of the following: (a) the institution of any bankruptcy, receivership, insolvency, reorganization or other similar proceedings by or against a Party under any bankruptcy, insolvency, or other similar law now or hereinafter in effect, including any section or chapter of the United States Bankruptcy Code, as amended or under any similar laws or statutes of the United States or any state thereof (the "Bankruptcy Code"), where in the case of involuntary proceedings such proceedings have not been dismissed or discharged within ninety (90) days after they are instituted, (b) the filing of an insolvency proceeding or making of an assignment for the benefit of creditors, (c) appointment of a receiver for all or substantially all of a Party's assets or (d) any corporate action taken by the board of directors of a Party in furtherance of any of the foregoing actions.

**1.3** "Binding Obligation" means, with respect to a Party: (a) any oral or written agreement or arrangement between such Party and an Affiliate of such Party or a Third Party that binds or affects such Party's operations or property, including any assignment, license agreement, loan agreement, guaranty, or financing agreement, (b) the provisions of such Party's charter, bylaws or other organizational documents or (c) any order, writ, injunction, decree or judgment of any court or Governmental Authority entered against such Party or by which any of such Party's operations or property are bound.

**1.4** "Biosimilar Notice" means a copy of any application submitted by a Third Party to the FDA under 42 U.S.C. § 262(k) of the Public Health Service Act (or, in the case of a country of the Territory outside the United States, any similar law) for Regulatory Approval of a biopharmaceutical product, which application identifies a Product as the Reference Product with respect to such product, and other information that describes the process or processes used to manufacture the biopharmaceutical product.

**1.5** "Biosimilar Product" means, with respect to a Product that is being sold in a country or regulatory jurisdiction in the Territory (the "Reference Product"), any

biopharmaceutical product sold by a Third Party (other than a Third Party acting on behalf of or in concert with Pfizer or any Pfizer Affiliate or Sublicensee, or that purchased such product in a chain of distribution that included Pfizer or any of its Affiliates or Sublicensees) in such country or regulatory jurisdiction in the Territory that (i) [ * ] the Reference Product, and (ii) through reference to the BLA of the Reference Product, is eligible for and has achieved Marketing Approval (with all references in such definition to Product to be deemed references to such biopharmaceutical product) in such country or regulatory jurisdiction pursuant to an abbreviated follow-on biological approval pathway established by the Regulatory Authority in such country or regulatory jurisdiction pursuant to the applicable Law, or otherwise is approved for marketing and sale in such country or regulatory jurisdiction by an abridged procedure in reliance, in whole or in part, on the BLA of the Reference Product, including any such biopharmaceutical product that (a) with respect to such biopharmaceutical product in the United States, has been approved or licensed as a biosimilar or interchangeable product by FDA pursuant to Section 351(k) of the Public Health Service Act (42 U.S.C. §262(k)), as may be amended, or any subsequent or superseding law, statute or regulation, (b) with respect to such biopharmaceutical product subject to the regulatory jurisdiction of the EMA, has been approved as a similar biological medicine product by EMA as described in CHMP/437/04, issued 30 October 2005, as may be amended, or any subsequent or superseding law, statute or regulation, or (c) with respect to such biopharmaceutical product outside the United States and in a country which is not subject to the regulatory jurisdiction of the EMA, has otherwise obtained Marketing Approval (with all references in such definition to Product to be deemed references to such biopharmaceutical product) by Regulatory Authorities in such other jurisdictions under analogous laws and regulations as those described the foregoing subsections (a) or (b).

**1.6** "BLA" or "Biologic License Application" means (a) an application requesting permission from the FDA to introduce, or deliver for introduction, a biopharmaceutical product into interstate commerce, or (b) any similar application or submission for Marketing Approval of a biopharmaceutical product filed with a Regulatory Authority in a country or group of countries.

**1.7** "Business Day" means a day other than a Saturday, Sunday or a bank or other public holiday in California or New York.

**1.8** "Calendar Quarter" means a period of three consecutive calendar months ending on March 31, June 30, September 30 or December 31.

**1.9** "Calendar Year" means any twelve (12) month period beginning on January 1 and ending on the first December 31 thereafter.

**1.10** "Change of Control" means, with respect to a Party, (a) a merger, reorganization, combination or consolidation of such Party with a Third Party that results in holders of beneficial ownership (other than by virtue of obtaining irrevocable proxies) of the voting securities or other voting interests of such Party (or, if applicable, the ultimate parent of such Party) immediately prior to such merger, reorganization, combination or consolidation ceasing to hold beneficial ownership of at least fifty percent (50%) of the combined voting power of the surviving entity or the parent of the surviving entity immediately after such merger, reorganization, combination or



[ * ] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

consolidation, (b) a transaction or series of related transactions in which a Third Party, together with its Affiliates, becomes the beneficial owner (other than by virtue of obtaining irrevocable proxies) of fifty percent (50%) or more of the combined voting power of the outstanding securities or other voting interest of such Party, or (c) the sale, lease, exchange, contribution or other transfer (in one transaction or a series of related transactions) to a Third Party of all or substantially all of such Party's assets to which this Agreement relates, other than a sale or disposition of such assets to an Affiliate of such Party or (d) the approval of any plan or proposal for the liquidation or dissolution of such Party (other than in circumstances where such Party is deemed a debtor pursuant to Section 8.2(c)).

**1.11** "Commercialize" or "Commercialization" means to (a) market, promote, distribute, offer for sale, sell, have sold, import, have imported, export, have exported or otherwise commercialize a compound or product and (b) conduct pre-clinical, clinical and other Development activities with respect to a compound or product, in each case, after such compound or product has received Marketing Approval.

**1.12** "Commercially Reasonable Efforts" means, with respect to the efforts to be expended by a Party with respect to any objective, those reasonable, good faith efforts to accomplish such objective as such Party would normally use to accomplish a similar objective under similar circumstances. With respect to any efforts relating to the Development, Marketing Approval, Manufacturing or Commercialization of a Product by a Party, generally or with respect to any particular country in the Territory, such Party will be deemed to have exercised "Commercially Reasonable Efforts" if such Party has exercised those efforts that would be normally used by such Party, in the relevant country, with respect to other gene therapy products or gene therapy product candidates, as applicable, (a) of similar modality controlled by such Party; or (b) (i) to which such Party has similar rights, (ii) which is of similar market potential in such country, and (iii) which is at a similar stage in its development or product life cycle, as such Product, in each case, taking into account all Relevant Factors in effect at the time such efforts are to be expended. Further, to the extent that the performance of a Party's obligations hereunder is adversely affected by the other Party's failure to perform its obligations hereunder, the impact of such performance failure will be taken into account in determining whether such Party has used its Commercially Reasonable Efforts to perform any such affected obligations.

**1.13** "Companion Diagnostic Assay" means a diagnostic assay for (i) [ * ], (ii) [ * ], or (iii) [ * ]. For clarity, any such assay may, but need not necessarily, include as a component(s) thereof any component(s) of any Product.

**1.14** "Compliance" means, with respect to a Party, the adherence by such Party and its Affiliates in all material respects to all applicable Laws and such Party's Party Specific Regulations, in each case with respect to the activities to be conducted under this Agreement.

**1.15** "Compound" means any zinc finger fusion protein which arises from or existed prior to the Effective Date and which is evaluated pursuant to the Research Plan, or is a derivative thereof created by Sangamo pursuant to the Agreement, that (a) specifically binds, as set forth in the Research Plan or otherwise agreed by the Parties, to an allele of the chromosome

9 open reading frame 72 gene ("C9ORF72") that contains more than [ * ] hexanucleotide repeats and (b) (i) [ * ] or (ii) [ * ], in each of (i) and (ii) at or above the levels specified in the Research Plan or otherwise agreed by the Parties.

**1.16** "Confidential Information" of a Party means all Know-How, or other information, including proprietary information (whether or not patentable) regarding or embodying such Party's or its Representatives' technology, products, business information or objectives, including but not limited to unpublished patent applications and other non-public information and data of a financial, commercial, business, operational or technical nature (including information comprising or relating to concepts, discoveries, inventions, data, designs or formulae), that is disclosed by or on behalf of such Party or any of its Affiliates or otherwise made available to the other Party or any of its Affiliates, whether made available orally, in writing or in electronic form, in connection with this Agreement on or after the Effective Date (or as otherwise provided in Section 12.12), but only to the extent that such Know-How or other information in written form is marked in writing as "confidential" at the time of disclosure, and such Know-How or other information disclosed orally or in non-tangible form is identified by the Disclosing Party as "confidential" at the time of disclosure. Failure to mark Confidential Information disclosed in writing hereunder as "Confidential" shall not cause the information to be considered non-confidential, with the burden on the disclosing Party to prove such information should have been known by a reasonable person with expertise on the subject matter, based on the nature of the information and the circumstances of its disclosure, to be Confidential Information, provided that the disclosing Party has otherwise made good faith efforts to clearly mark Confidential Information as such.

**1.17** "Control" or "Controlled" means, with respect to any Patent Rights, Know-How or other intellectual property right, that a Party (a) owns or (b) has a license (other than a license granted to such Party under this Agreement) to such Patent Rights, Know-How or intellectual property right and, in each case, has the ability to grant to the other Party a license, sublicense or access (as applicable) to the foregoing on the terms and conditions set forth in this Agreement without violating the terms of any then-existing agreement or arrangement with any Third Party.

**1.18** "Cover" means, with respect to a given Product and Patent Right, that a Valid Claim of such Patent Right would, absent a license thereunder or ownership thereof, be infringed by the making, use, sale, offer for sale or importation of such Product, and for purpose of determining such infringement, considering Valid Claims of pending patent applications, such claims should be considered as if they have already been issued in accordance with the definition of Valid Claim.

**1.19** "Current License" means any agreement (i) that Sangamo or its Affiliates has entered into with a Third Party prior to the Effective Date and (ii) pursuant to which Sangamo or its Affiliates have a license from such Third Party to any Licensed Technology or Licensed Companion Diagnostic Technology as of the Effective Date.

**1.20** "Current Licensor" means any Third Party that is a party to a Current License.

**1.21** "Develop" or "Development" means all development activities for any Product, including conducting pre-clinical and clinical studies, manufacturing process development, and toxicology studies of a Product for use in clinical trials (including placebos and comparators), statistical analyses, and the preparation, filing and prosecution of any BLA for a Product, as well as all regulatory activities related to any of the foregoing, in each case prior to Marketing Approval.

**1.22** "Dollar" means the U.S. dollar, and "$" shall be interpreted accordingly.

**1.23** "EMA" means the European Medicines Agency or any successor entity thereto.

**1.24** "Executive Officers" means, for Sangamo, the Chief Executive Officer or designee, and for Pfizer, the Chief Scientific Officer of the Rare Disease Research Unit, or designee, or the Global President, Rare Disease, or designee, provided in each case that such person is not a member of the JRC at the time that the applicable disagreement arises.

**1.25** "FDA" means the United States Food and Drug Administration or any successor entity thereto.

**1.26** "Field" means the treatment of all human disease syndromes or medical conditions in humans, including but not limited to amyotrophic lateral sclerosis ("ALS") and frontotemporal lobar degeneration ("FTLD"), and including the use of any related Companion Diagnostic Assay.

**1.27** "Filing" of an IND or BLA means the acceptance by a Regulatory Authority of such IND or BLA for filing and review, if applicable, or otherwise the submission of such IND or BLA.

**1.28** "First Commercial Sale" means, with respect to a particular Product and country of the Territory, the first sale of such Product by Pfizer or any of Pfizer's Affiliates or Sublicensees to a Third Party in an Indication in the Field in such country after such Product has been granted Marketing Approval and, where necessary, Pricing Approval by the appropriate Regulatory Authority in such country.

**1.29** "GAAP" means the U.S. generally accepted accounting principles, consistently applied.

**1.30** "Governmental Authority" means any national, international, federal, state, provincial or local government, or political subdivision thereof, or any multinational organization or any authority, agency or commission entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power, any court or tribunal (or any department, bureau or division thereof, or any governmental arbitrator or arbitral body).

**1.31** "Government Official", to be broadly interpreted, means (a) any elected or appointed government official (e.g., a member of a ministry of health), (b) any employee or

person acting for or on behalf of a government official, Governmental Authority, or other enterprise performing a governmental function, (c) any political party, candidate for public office, officer, employee, or person acting for or on behalf of a political party or candidate for public office, and (d) any employee or person acting for or on behalf of a public international organization (e.g., the United Nations). For clarity, HCP employed by government-owned hospitals will be considered Government Officials.

**1.32** "IND" means any investigational new drug application, clinical trial application, clinical trial exemption or similar or equivalent application or submission for approval to conduct human clinical investigations filed with or submitted to a Regulatory Authority in conformance with the requirements of such Regulatory Authority.

**1.33** "Indication" means a separate, defined, well-categorized class of human disease syndrome or medical condition for which a separate BLA or a supplement thereto may be filed.

**1.34** "Initiate" or "Initiation" means, with respect to a clinical trial of a Product, the [ * ] in such clinical trial.

**1.35** "Intellectual Property Rights" means any and all (a) Patent Rights, (b) proprietary rights in Know How, including trade secret rights, (c) proprietary rights associated with works of authorship and software, including copyrights, moral rights, and copyrightable works, and all applications, registrations, and renewals relating thereto, and derivative works thereof, (d) other forms of proprietary or intellectual property rights however denominated throughout the world, other than trademarks, service marks, trade names, domain names and other indicators of origin.

**1.36** "Invention" means any invention, discovery, improvement, modification, process, method, assay, design, protocol, formula, data, know-how or trade secret, whether patentable, copyrightable or otherwise, that is discovered, generated, conceived or reduced to practice by or on behalf of a Party or its Affiliate or Sublicensee through activities conducted under this Agreement, including all rights, title and interest in and to the intellectual property rights therein and thereto.

**1.37** "Joint Know-How" means any Know-How, whether or not patentable, excluding any Zinc Finger Research Program Know-How, made or created during the Term in connection with the work conducted under or in connection with this Agreement jointly by (a) Sangamo or any of its Representatives and (b) Pfizer or any of its Representatives.

**1.38** "Joint Patent Right" means any Patent Right that claims or discloses any invention included in Joint Know-How.

**1.39** "Joint Technology" means the Joint Know-How and the Joint Patent Rights.

**1.40** "Know-How" means any information, including discoveries, improvements, modifications, processes, methods, assays, designs, protocols, formulas, data, inventions, know-how and trade secrets (in each case, patentable, copyrightable or otherwise), but excluding any Patent Rights.

**1.41** "Law" means any federal, state, local, foreign or multinational law, statute, standard, ordinance, code, rule, regulation, resolution or promulgation, or any order by any Governmental Authority, or any license, franchise, permit or similar right granted under any of the foregoing, or any similar provision having the force or effect of law.

**1.42** "Lead Development Compound" means a Compound that satisfies the following criteria:

**(a)** [ * ];

**(b)** [ * ]; and

**(c)** [ * ].

Notwithstanding the foregoing, a Compound shall be deemed a "Lead Development Compound" if Pfizer elects, [ * ], to conduct any [ * ] study of a Product containing such Compound. Upon making such election (a) Pfizer shall provide Sangamo, prior to initiating such study, with written notice that it intends to conduct such study and (b) the first Development Milestone Event set forth in Section 5.2(a) shall be deemed achieved and payable. [ * ]; however, should Pfizer not conduct a [ * ] study of a Product [ * ], this Agreement will be deemed terminated pursuant to Section 8.2(a)].

**1.43** "Licensed Companion Diagnostic Technology" means all Know-How and Patent Rights that are Controlled by Sangamo or its Affiliates as of the Effective Date or during the Term, including for the avoidance of doubt Sangamo's interest in Joint Technology, that are necessary or useful for the development, manufacture, use, sale, offer for sale, importation or commercialization of Companion Diagnostic Assays in the Field in the Territory; provided, however, that for purposes of this definition:

**(a)** the Know-How and Patent Rights owned or Controlled by any Third Party that becomes an Affiliate of Sangamo after the Effective Date as a result of a Change of Control of Sangamo shall not be included in the Licensed Companion Diagnostic Technology unless Sangamo or its Affiliates use or develop such Know-How or Patent Rights in the performance of their activities under the Agreement; and

**(b)** notwithstanding the foregoing, Licensed Companion Diagnostic Technology shall not include:

(i) Excluded Upstream IP pursuant to Section 2.5(a);

(ii) Know-How and Patent Rights Controlled by Sangamo pursuant to [ * ] and [ * ];

(iii) Know-How and Patent Rights related to [ * ], including but not limited to [ * ];

(iv) Know-How and Patent Rights related to [ * ];

(v) Know-How and Patent Rights related to [ * ], including but not limited to [ * ] Know-How and Patent Rights Controlled by Sangamo pursuant to (1) [ * ], and (2) [ * ];

(vi) Know-How and Patent Rights related to [ * ]; and

(vii) Know-How and Patent Rights related to [ * ].

**1.44** "Licensed Know-How" means the Know-How included in the Licensed Technology.

**1.45** "Licensed Patents" means the Patent Rights included in the Licensed Technology. As of the Effective Date, the Patent Rights listed on **Exhibit A** are Licensed Patents.

**1.46** "Licensed Technology" means all Know-How and Patent Rights that are Controlled by Sangamo or its Affiliates as of the Effective Date or during the Term, including, for avoidance of doubt, Sangamo's interest in Joint Technology, that are necessary or useful for the Development, Manufacture, use, sale, offer for sale, importation or Commercialization of Products in the Field in the Territory; provided, however, that for purposes of this definition:

**(a)** the Know-How and Patent Rights owned or Controlled by any Third Party that becomes an Affiliate of Sangamo after the Effective Date as a result of a Change of Control of Sangamo shall not be included in the Licensed Technology unless Sangamo or its Affiliates use or develop such Know-How or Patent Rights in the performance of their activities under the Agreement; and

**(b)** notwithstanding the foregoing, Licensed Technology shall not include:

(i) Excluded Upstream IP pursuant to Section 2.5(a);

(ii) Know-How and Patent Rights Controlled by Sangamo pursuant to [ * ];

(iii) Know-How and Patent Rights related to [ * ], including but not limited to [ * ];

(iv) Know-How and Patent Rights related to [ * ]; and

(v) Know-How and Patent Rights related to [ * ], including but not limited to [ * ] Know-How and Patent Rights Controlled by Sangamo pursuant to (1) [ * ] and (2) [ * ].

**1.47** "Major EU Countries" means [ * ] and "Major EU Country" means any of the foregoing countries.

**1.48** "Major Market Countries" means [ * ].

**1.49** "Manufacture" means to make, produce, manufacture, process, fill, finish, package, label, perform quality assurance testing, release, ship or store a compound or product or any component thereof. When used as a noun, "Manufacture" or "Manufacturing" means any and all activities involved in the Manufacture of a compound or product or any component thereof.

**1.50** "Marketing Approval" means all technical, medical and scientific licenses, registrations, authorizations and approvals (including approvals of BLAs, supplements and amendments, pre- and post- approvals and labeling approvals) of any Regulatory Authority, necessary for the Commercialization of a Product in a given country or regulatory jurisdiction.

**1.51** "Net Sales" means:

(a) with respect to a Product that is not a Combination Product, the gross receipts from sales by Pfizer and its Affiliates and Sublicensees of such Product to Third Parties in the Territory that is recorded as revenue by Pfizer or its Affiliate or Sublicensee according to such Person's revenue recognition policies consistently applied, less in each case, to the extent actually incurred or allowed with respect to such Product, (i) bad debts actually incurred, (ii) sales returns and allowances actually paid, granted or accrued, including trade, quantity and cash discounts and any other adjustments, including those granted on account of price adjustments, billing errors, rejected goods, damaged or defective goods, recalls, returns, rebates, chargeback rebates, reimbursements or similar payments granted or given to wholesalers or other distributors, buying groups, health care insurance carriers, chain pharmacies, mass merchandisers, staff model HMO's, pharmacy benefit managers or other institutions, (iii) adjustments arising from consumer discount programs or other similar programs, (iv) customs or excise duties, sales tax, consumption tax, value added tax, and other taxes (except income taxes) or duties relating to sales of such Product, (v) any payment in respect of sales of such Product to the United States government, any state government or any foreign government, or to any other Governmental Authority, or with respect to any government-subsidized program or managed care organization, and (vi) freight and insurance (to the extent that Pfizer, its Affiliates or its Sublicensees bear the cost of freight and insurance for the Product); and

(b) with respect to sales in a particular country and Pfizer Quarter of a product containing a Product and one or more other therapeutically active ingredients, [ * ] (each a "Combination Product"), the percentage of the Net Sales in such country of such Combination Product (as determined in accordance with clause (a)) that is calculated as follows:

(i) if the Product and other therapeutically active ingredient(s) of such Combination Product are each sold separately in such country during such Pfizer Quarter, the fraction A/(A+B), where A is the average sale price of the Product as sold separately in such country and Pfizer Quarter and B is the average sale price of the other therapeutically active ingredient(s) in the Combination Product as sold separately in such country and Pfizer Quarter;

(ii) if the Product is sold separately in such country and Pfizer Quarter, but the other therapeutically active ingredient(s) of such Combination Product are not sold separately in such country during such Pfizer Quarter, the fraction A/C, where A is the average sale price of the Product as sold separately in such country and Pfizer Quarter and C is the average sale price of the Combination Product in such country and Pfizer Quarter;

(iii) if the Product is not sold separately in such country and Pfizer Quarter, but the other therapeutically active ingredient(s) of such Combination Product are sold separately in such country during such Pfizer Quarter, the fraction the fraction [ * ], where B is the average sale price in such country and Pfizer Quarter of the other therapeutically active ingredient(s) of such Combination Product and C is the average sale price of the Combination Product in such country and Pfizer Quarter; and

(iv) if neither the Product nor the other therapeutically active ingredient(s) of such Combination Product are sold separately in such country during such Pfizer Quarter, the Parties shall in good faith determine such fraction by mutual agreement based on the relative contribution of the Product and the other active ingredient(s) in the Combination Product, and if the Parties fail to agree, the fraction will be determined by an independent expert agreed by the Parties, whose decision will be binding.

Net Sales will be determined from books and records maintained in accordance with GAAP, as consistently applied by Pfizer, its Affiliate or Sublicense, as applicable, with respect to sales of the Products. For clarity, Net Sales shall not include (i) sales of any Product made at or below cost under a compassionate use program, (ii) distribution of Samples of any Product, or (iii) donations of any Product, in each case by Pfizer, its Affiliates or Sublicensees.

**1.52** "Party Specific Regulations" means all non-monetary judgments, decrees, orders or similar decisions issued by any Governmental Authority specific to a Party, and all consent decrees, corporate integrity agreements, or other agreements or undertakings of any kind by a Party with any Governmental Authority, in each case as the same may be in effect from time to time and applicable to a Party's activities contemplated by this Agreement.

**1.53** "Patent Rights" means any and all (a) issued patents, (b) pending patent applications, including all provisional applications, substitutions, continuations, continuations-in-part, divisions and renewals, and all patents granted thereon, (c) patents-of-addition, reissues, reexaminations and extensions or restorations by existing or future extension or restoration mechanisms, including patent term adjustments, patent term extensions, supplementary protection certificates or the equivalent thereof, (d) inventor's certificates, (e) other forms of government-issued rights substantially similar to any of the foregoing and (f) United States and foreign counterparts of any of the foregoing.

**1.54** "Person" means any individual, partnership, limited liability company, firm, corporation, association, trust, unincorporated organization or other entity.

**1.55** "Pfizer Diligence Obligations" means Pfizer's Development and Marketing Approval diligence obligations under Section 4.2(a) and Pfizer's Commercialization diligence obligations under Section 4.2(b).

**1.56** "Pfizer Quarter" means each of the four (4) thirteen (13) week periods (a) with respect to the United States, commencing on January 1 of any Pfizer Year and (b) with respect to any country in the Territory other than the United States, commencing on December 1.

**1.57** "Pfizer Year" means the twelve month fiscal periods observed by Pfizer (a) commencing on January 1 with respect to the United States and (b) December 1 with respect to any country in the Territory other than the United States.

**1.58** "Pivotal Trial" means a human clinical trial of a Product that either (a) would satisfy the requirements of 21 C.F.R. 312.21(c) or corresponding foreign regulations; or (b) is intended (as of the time the clinical trial is Initiated) to obtain sufficient data to support the Filing of a BLA for such Product (but may not include the data that may be necessary to support the Pricing Approval). Pivotal Trial may include (i) a clinical trial that is designed to satisfy the requirements of both 21 C.F.R. 312.21(b) and 21 C.F.R. 312.21(c) or corresponding foreign regulations (i.e., a Phase 2/3 trial), or (ii) a Phase 2 clinical trial that is [ * ] to satisfy the requirements of 21 C.F.R. 312.21(c) or to provide sufficient data to support the Filing of a BLA for such Product, in which case such Pivotal Trial shall be deemed to [ * ].

**1.59** "Pricing Approval" means, in any country where a Governmental Authority authorizes reimbursement for, or approves or determines pricing for, pharmaceutical products, receipt (or, if required to make such authorization, approval or determination effective, publication) of such reimbursement authorization or pricing approval or determination (as the case may be).

**1.60** "Product" means any gene therapy product that [ * ], in each case in a formulation suitable for administration to patients. For clarity, [ * ].

**1.61** "Regulatory Authority" means with respect to a country in the Territory, any national (e.g., the FDA), supra-national (e.g., the European Commission, the Council of the European Union, or the European Medicines Agency), regional, state or local regulatory agency, department, bureau, commission, council or other Governmental Authority involved in granting Marketing Approvals for Products in such country, including the FDA, the EMA and any corresponding national or regional regulatory authorities.

**1.62** "Regulatory Exclusivity" means any exclusive marketing rights or data exclusivity rights conferred by any Regulatory Authority with respect to a pharmaceutical product other than Patent Rights, including orphan drug exclusivity, new chemical entity exclusivity, data exclusivity, pediatric exclusivity, rights conferred in the United States under the Hatch-Waxman Act, the FDA Modernization Act of 1997 or the Biologics Price Competition and Innovation Act, or rights similar thereto outside the United States.

**1.63** "Regulatory Materials" means all regulatory applications, submissions, notifications, communications, correspondences, registrations, approvals and other filings made to, received from or otherwise conducted with a Regulatory Authority in order to develop, manufacture, or commercialize a Product in a particular country or jurisdiction. "Regulatory Materials" includes all INDs, BLAs and Marketing Approvals.

**1.64** "Relevant Factors" means all relevant factors that may affect the Development, Marketing Approval, Pricing Approval or Commercialization of a Product, including (as applicable and without limitation): [ * ].

**1.65** "Representatives" means (a) with respect to Pfizer, Pfizer, its Affiliates, its Sublicensees and each of their respective officers, directors, employees, consultants, contractors and agents and (b) with respect to Sangamo, Sangamo, its Affiliates and each of their respective officers, directors, employees, consultants, contractors and agents.

**1.66** "Research Program Clinical Candidate Patent Right" means a Zinc Finger Research Program Patent Right that (a) is a Licensed Patent, which (b) [ * ] discloses, and claims or is intended to claim, a specific Compound (which may be a Compound that is being, or is to be, developed as a candidate compound or as a potential back-up to a candidate compound), or claims related thereto, [ * ] methods for expressing such Compound-encoding nucleic acids, a Product comprising a nucleic acid encoding a Compound, and methods of making, using or administering Products; provided that (i) all claims in such Patent Right recite at least one zinc finger protein intended to specifically bind C9ORF72, which for avoidance of doubt may be recitation of nucleic acid encoding such zinc finger protein, as an element in such claims and (ii) none of the claims cover (1) any [ * ] or (2) the [ * ]. For avoidance of doubt, Research Program Clinical Candidate Patent Rights may include [ * ], provided all such claims recite at least one zinc finger protein intended to specifically bind C9ORF72.

**1.67** "Research Program Know-How" means any and all Know-How, whether or not patentable, (a) made solely by or on behalf of a Party or its representatives in the conduct of activities under the Research Plan or (b) made jointly by or on behalf of (i) Sangamo or its representatives, and (ii) Pfizer or its representatives, in the conduct of activities under the Research Plan.

**1.68** "Research Program Patent Rights" means any Patent Rights claiming or disclosing any invention included in Research Program Know-How.

**1.69** "Research Program Technology" means Research Program Know-How and Research Program Patent Rights.

**1.70** "Reversion Technology" means, as of the effective date of termination of this Agreement and with respect to a Continuation Product, (a) any Know-How of Pfizer that was invented, discovered, developed, or used during the Term and in connection with Pfizer's or its Affiliates' activities under the Agreement and (b) any Patent Right of Pfizer if and solely to the extent such Patent Right of Pfizer claims any Know-How of Pfizer described in clause (a) above,

in each case of clause (a) and (b) to the extent actually used by Pfizer to Develop, Commercialize or Manufacture such Continuation Product as of the time of termination.

**1.71** "Samples" means units of a Product which are not intended to be sold or traded, which are intended to be distributed to authorized healthcare professionals, and which are intended to promote the sale of such Product in accordance with 21 C.F.R. Part 203(d), or any successor provisions to such laws and regulations or in accordance with Applicable Law in any non-U.S. jurisdiction where such Product units are to be distributed.

**1.72** "Sangamo Patent Rights" means any Licensed Patents that are not Research Program Patent Rights.

**1.73** "Sangamo Third Party Agreement" means any agreement between Sangamo (or any of its Affiliates) and any Third Party (such Third Party, a "Third Party Licensor") under which such Third Party grants Sangamo a license under any of the Licensed Technology or Licensed Companion Diagnostic Technology, including Upstream Licenses. For clarity, the Sangamo Third Party Agreements consist of the Current Licenses and the Upstream Licenses, and all Current Licensors shall be deemed Third Party Licensors hereunder.

**1.74** "Sublicensee" means (a) with respect to Pfizer, any Person to whom Pfizer grants or has granted, directly or indirectly, a sublicense of rights licensed by Sangamo to Pfizer under this Agreement or (b) with respect to Sangamo, any Person to whom Sangamo grants or has granted, directly or indirectly, a sublicense of rights licensed by Pfizer to Sangamo under the Agreement.

**1.75** "Territory" means worldwide.

**1.76** "Third Party" means any Person other than a Party or an Affiliate of a Party.

**1.77** "United States" or "U.S." means the United States of America, including its territories and possessions.

**1.78** "Upstream Licensor" means any licensor of an Upstream License.

**1.79** "Valid Claim" means, with respect to a particular country and Product (a) a claim of an issued and unexpired Patent Right in the Licensed Technology, Research Program Technology or Joint Technology that (i) has not been revoked or held unenforceable, unpatentable or invalid by a decision of a court or other Governmental Authority of competent jurisdiction that is not appealable or has not been appealed within the time allowed for appeal, and (ii) that has not been canceled, withdrawn, abandoned, disclaimed, denied or admitted to be invalid or unenforceable through reissue, re-examination or disclaimer or otherwise, or (b) a claim of a pending patent application that has not been cancelled, withdrawn, abandoned or finally rejected by an administrative agency action from which no appeal can be taken, provided that any claim in any patent application pending for more than [ * ] from the earliest date on which such claim claims priority shall not be considered a Valid Claim for purposes of the Agreement from and after such [ * ] date unless and until a patent containing such claim issues

from such patent application and solely if such patent issues while another Valid Claim Covers the relevant Product in the relevant country.

**1.80** "Zinc Finger Research Program Know-How" means Research Program Know-How that relates 1) to zinc finger proteins, or 2) to improvements to proprietary elements contained in a zinc finger expression cassette disclosed, provided, or used by Sangamo under the Research Program, and which are not improvements to proprietary Pfizer expression cassette elements disclosed, provided, or used by Pfizer under the Research Program.

**1.81** "Zinc Finger Research Program Patent Rights" means any Patent Rights claiming or disclosing any invention included in Zinc Finger Research Program Know-How.

**1.82** "Zinc Finger Protein Research Technology" means Zinc Finger Research Program Know-How and Zinc Finger Research Program Patent Rights.

**1.83** **Interpretation**. Except where the context expressly requires otherwise, (a) the use of any gender herein will be deemed to encompass references to either or both genders, and the use of the singular will be deemed to include the plural (and vice versa), (b) the words "include", "includes" and "including" will be deemed to be followed by the phrase "without limitation", (c) the word "will" will be construed to have the same meaning and effect as the word "shall", (d) any definition of or reference to any agreement, instrument or other document herein will be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), (e) any reference herein to any Person will be construed to include the Person's successors and assigns, (f) the words "herein", "hereof" and "hereunder", and words of similar import, will be construed to refer to this Agreement in its entirety and not to any particular provision hereof, (g) all references herein to Sections or Exhibits will be construed to refer to Sections or Exhibits of this Agreement, and references to this Agreement include all Exhibits hereto, (h) the word "notice" means notice in writing (whether or not specifically stated) and will include notices, consents, approvals and other written communications contemplated under this Agreement, (i) provisions that require that a Party, the Parties or any committee hereunder "agree," "consent" or "approve" or the like will require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, approved minutes or otherwise (but excluding e-mail and instant messaging), and (j) references to any specific law, rule or regulation, or article, section or other division thereof, will be deemed to include the then-current amendments thereto or any replacement or successor law, rule or regulation thereof.

**ARTICLE 2**
**LICENSES; EXCLUSIVITY**

**2.1 Licenses to Pfizer.**

**(a) License Grants**. Subject to the terms and conditions of this Agreement (including Sangamo's retained rights), effective as of the Effective Date and in each case without limiting any other license (or sublicense) granted under this Agreement, Sangamo hereby grants, and will cause its Affiliates to hereby grant, to Pfizer:

(i) an exclusive (even as to Sangamo and its Affiliates except as provided in Section 2.1(c)), royalty-bearing license (or, to the extent any Licensed Technology is Controlled by Sangamo or its Affiliates pursuant to a Sangamo Third Party Agreement, a sublicense), with the right to sublicense solely as provided in Section 2.1(b), under the Licensed Technology, to use, have used, Develop, have Developed, Manufacture, have Manufactured, Commercialize, have Commercialized and otherwise exploit Products in the Field in the Territory; and

(ii) a fully paid and royalty-free (except to the extent that any payments are owed to any Upstream Licensor with respect to the practice of a sublicense granted pursuant to this subsection (ii)), worldwide, non-exclusive license (or sublicense, as applicable), with the right to sublicense solely as provided in Section 2.1(b), under the Licensed Companion Diagnostic Technology, to use, have used, develop, have developed, make, have made, sell, have sold, offer for sale, import, export, and otherwise exploit Companion Diagnostic Assays for (A) use in [ * ] and (B) otherwise for use in connection with the Product in the Field. Notwithstanding any provision to the contrary in this Agreement, the license granted under this Section 2.1(a)(ii) hereof shall be, as of the completion of the Research Term (unless this Agreement has been terminated as contemplated in (X) Section 5.1 because no Compounds have been identified as of such completion date or (Y) Section 1.42 because no Lead Development Compound has been identified as of such completion date), perpetual and irrevocable and shall survive expiration or any other termination of this Agreement.

**(b) Sublicenses.**

(i) Subject to the terms and conditions of this Agreement and the applicable Sangamo Third Party Agreements, Pfizer may grant to its Affiliates or Third Parties (through one or more tiers) sublicenses under the licenses granted by Sangamo to Pfizer under Sections 2.1(a)(i) and 2.1(a)(ii) upon written notice to Sangamo; provided that Pfizer shall remain responsible for the performance of all of its Sublicensees to the same extent as if such activities were conducted by Pfizer, and shall remain responsible for any payments due hereunder with respect to activities of any Sublicensees.

(ii) Pfizer shall provide Sangamo with a copy of each executed sublicense agreement within [ * ] after execution thereof (excluding any such agreement under which Pfizer grants a sublicense to an Affiliate or solely to conduct Development or

Manufacturing on behalf of Pfizer or its Affiliate, unless Sangamo is obligated to provide such copy to a Third Party Licensor in which case Sangamo will obtain the written consent from Pfizer, not to be unreasonably withheld, prior to entering into such license which would obligate Sangamo to provide such copy), which shall be treated by Sangamo as Pfizer's Confidential Information, provided that to the extent required by any Sangamo Third Party Agreement, Sangamo shall be permitted to provide a confidential copy to the applicable Third Party Licensor. Prior to providing a copy of such sublicense agreement to Sangamo, Pfizer may (unless otherwise required by a Sangamo Third Party Agreement and Sangamo has received Pfizer's prior written consent) redact certain terms of any such sublicense agreement to the extent not pertinent to an understanding of a Party's obligations or benefits under this Agreement or a verification of compliance with the requirements of this Agreement.

**(c) Retained Rights for Exclusive Licenses**. Notwithstanding the exclusive license granted by Sangamo to Pfizer under Section 2.1(a)(i), Sangamo retains the rights under the Licensed Technology to perform its obligations and to exercise its rights under this Agreement, whether directly or through one or more subcontractors.

**(d) Sangamo Third Party Agreements**. The licenses granted to Pfizer in Section 2.1(a) include sublicenses under Licensed Technology or Licensed Companion Diagnostic Technology licensed to Sangamo pursuant to the Sangamo Third Party Agreements, which sublicenses are subject to the terms of such Sangamo Third Party Agreements. The Sangamo Third Party Agreements in effect as of the Effective Date are listed on Exhibit F and the applicable terms in such Sangamo Third Party Agreements are set forth on **Schedule 2.1(d)**, which may be amended by mutual agreement of the Parties for Sangamo Third Party Agreements entered into after the Effective Date. Pfizer acknowledges and agrees to be bound by such terms, and agrees not to take or fail to take any action that would cause Sangamo to be in breach of any Sangamo Third Party Agreement, subject to Sangamo's compliance with Section 2.7(a). Pfizer acknowledges that certain of the licenses granted to Sangamo under the Sangamo Third Party Licenses are non-exclusive, and that Pfizer's license pursuant to Section 2.1(a)(i) with respect to the relevant Licensed Technology are exclusive only with respect to Sangamo, and not with respect to its licensor.

**2.2 Reciprocal Non-Exclusive Research License for Disclosed Know-How and Confidential Information.** Subject to any pre-existing exclusive license grants to Third Parties as of the Effective Date, and excluding any license whose grant or practice would cause Sangamo to be in breach of any exclusivity obligation to any Third Party existing as of the Effective Date, and without limiting any other license granted to either Party under this Agreement:

**(a)** Pfizer hereby grants and shall cause its Affiliates to hereby grant to Sangamo a non-exclusive, irrevocable, perpetual, royalty-free, fully paid-up, worldwide license, with the right to sublicense to Sangamo's Affiliates, to use for research purposes (which excludes [ * ]) all Know-How and Confidential Information of Pfizer that is (i) Controlled by Pfizer or its Affiliates and (ii) disclosed to Sangamo or its Affiliates pursuant to this Agreement

during the Term; provided that nothing in this Section 2.2(a) shall give Sangamo or its Affiliates any right to practice under any Patent Right owned or Controlled by Pfizer or its Affiliates.

**(b)** Sangamo hereby grants and shall cause its Affiliates to hereby grant to Pfizer a non-exclusive, irrevocable, perpetual, royalty-free, fully paid-up, worldwide license, with the right to sublicense to Pfizer Affiliates, to use for research purposes (which excludes [ * ]) all Know-How and Confidential Information of Sangamo that is (i) Controlled by Sangamo or its Affiliates and (ii) disclosed to Pfizer or its Affiliates pursuant to this Agreement during the Term; provided that nothing in this Section 2.2(b) shall give Pfizer or its Affiliates any right to practice under any Patent Right owned or Controlled by Sangamo or its Affiliates.

**2.3 No Implied Licenses; Negative Covenant**. Except as expressly set forth herein, neither Party shall acquire any license or other intellectual property interest, by implication or otherwise, under or to any Patent Rights, Know-How, or other intellectual property owned or controlled by the other Party. Neither Party shall, nor shall permit any of its Affiliates or Sublicensees to, practice any Patent Rights or Know-How licensed to it by the other Party outside the scope of the license granted to it under this Agreement, provided that, notwithstanding anything to the contrary in this Agreement, nothing in this Agreement (including but not limited to this Section 2.3) shall be deemed to prevent or restrict in any way the ability of a Party or its Affiliates to conduct any activities in the Territory, which activities would be allowed under any safe harbor, research exemption, government or executive declaration of urgent public health need, or similar right available in law or equity if conducted by a Third Party.

**2.4 Exclusivity**.

**(a) Exclusivity Obligations**. Subject to Section 2.4(c), during the [ * ], Sangamo and Pfizer shall not, by itself or with or through any Affiliate or Third Party (including through the grant of a license to a Third Party) research, develop, manufacture or commercialize any zinc finger binding protein that specifically binds to C9ORF72 ("Competing Program"), except for the research, development, manufacture and commercialization of Products in accordance with this Agreement.

**(b) Exception**. Notwithstanding Section 2.4(a), if a Third Party becomes an Affiliate of a Party during the exclusivity period set forth in Section 2.4(a) through merger, acquisition, consolidation or other similar transaction and such new Affiliate, as of the effective date of such transaction, is engaged, or has a then-existing plan to engage, in the conduct of a Competing Program, then:

(i) If such transaction results in a Change of Control of such Party, then such new Affiliate shall have the right to continue such Competing Program and such continuation shall not constitute a breach by such Party of its exclusivity obligation set forth in Section 2.4(a), provided that such new Affiliate conducts such Competing Program independently of the activities under this Agreement and does not use any Licensed Technology,

Licensed Companion Diagnostic Technology, or the Confidential Information of the other Party in the conduct of such Competing Program.

(ii) If such transaction does not result in a Change of Control of such Party, then such Party and its new Affiliate shall have [ * ] from the closing date of such transaction to wind down or divest such Competing Program, and its new Affiliate's conduct of such Competing Program during such [ * ] period shall not constitute a breach by such Party of its exclusivity obligations set forth in Section 2.4(a), provided that such new Affiliate conducts such Competing Program during such [ * ] period independently of the activities under this Agreement and does not use any Licensed Technology, Licensed Companion Diagnostic Technology, or the Confidential Information of the other Party in the conduct of such Competing Program.

**(c) Early Termination**. If this Agreement is terminated prior to the expiration of each Party's exclusivity obligations as set forth in Section 2.4(a), then:

(i) If this Agreement is terminated by Pfizer during the Research Term pursuant to Section 8.2(b), Pfizer's exclusivity obligations hereunder shall terminate upon the [ * ] and Sangamo's exclusivity obligations hereunder shall terminate upon the [ * ].

(ii) If this Agreement is terminated by Sangamo during the Research Term pursuant to Section 8.2(b), Sangamo's exclusivity obligations hereunder shall terminate upon the [ * ] and Pfizer's exclusivity obligations hereunder shall terminate upon the [ * ].

(iii) If this Agreement is terminated as contemplated in (A) Section 5.1 because no Compounds have been identified as of the completion of the Research Term or (B) Section 1.42 because no Lead Development Compound has been identified as of the completion of the extended Research Term, then in either case (A) or (B) each Party's exclusivity obligations hereunder shall terminate on the [ * ], provided that in the case of (A) that, if before the [ * ] Sangamo identifies a zinc finger protein that had such zinc finger protein been identified during the Research Term it would have been a Compound, Sangamo shall provide Pfizer with prompt written notice and the Parties shall in good faith negotiate entering into an agreement under substantially similar terms as this Agreement, [ * ], to allow for Pfizer to further research, develop and commercialize such zinc finger protein or a derivative thereof isolated by Sangamo pursuant to the new agreement.

(iv) If this Agreement is terminated by Pfizer for any other reason, each Party's exclusivity obligations hereunder shall terminate upon the [ * ].

**2.5 Upstream Licenses**. If, during the Term, Sangamo obtains Control of any intellectual property rights that are owned or controlled by a Third Party and that are necessary or useful for the Development, Manufacture, use, sale, offer for sale, importation or Commercialization of any Compound in the Field in the Territory, then Sangamo shall notify Pfizer in writing, including a description of such intellectual property rights, if they have been non-exclusively ("Non-Exclusive Upstream License") or exclusively ("Exclusive Upstream

License") licensed and, with respect to such non-exclusively licensed intellectual property rights, of any payments that would be due as a result of the grant, maintenance or exercise of a sublicense to Pfizer under such intellectual property rights and a reasonable allocation (based on the scope of the license relative to the scope of the sublicense to Pfizer and provided that Sangamo disclose all the other relevant facts used by Sangamo to determine said reasonable allocation) of any other amounts payable under such license agreement that do not result solely from activities with respect to a particular product or entity (e.g., upfront fees or annual license fees). Each Non-Exclusive Upstream License for which Pfizer agrees to reimburse Sangamo for payments thereunder pursuant to Section 2.5(a), and each Exclusive Upstream License, will be an "Upstream License".

**(a) Non-Exclusive Upstream Licenses.** If within [ * ] after the receipt of such notice regarding a Non-Exclusive Upstream License, Pfizer agrees in writing to reimburse Sangamo for all payments due under such license as described above in this Section 2.5, then such intellectual property rights shall be included in the Licensed Technology and sublicensed to Pfizer under the terms and conditions of this Agreement (which sublicense shall be subject and subordinate to the terms and conditions of the Upstream License), and the agreement pursuant to which Sangamo obtained Control of such intellectual property rights shall become an Upstream License under this Agreement. If Pfizer does not agree in writing within such [ * ] to reimburse Sangamo for all such payments, then such intellectual property rights shall be deemed "Excluded Upstream IP" and shall be excluded from the Licensed Technology, and the agreement pursuant to which Sangamo obtains Control of such intellectual property rights shall not be included in the Upstream Licenses. For avoidance of doubt, should Pfizer secure a license to any Excluded Upstream IP, [ * ] would apply.

**(b) Exclusive Upstream Licenses.** If Sangamo obtains an Exclusive Upstream License, such exclusively licensed intellectual property rights shall be included in the Licensed Technology and sublicensed to Pfizer under the terms and conditions of this Agreement (which sublicense shall be subject and subordinate to the terms and conditions of the Upstream License), and the agreement pursuant to which Sangamo obtains Control of such intellectual property rights shall automatically become an Upstream License under this Agreement.

**(c) Information**. Pfizer shall (i) provide Sangamo, in a timely manner as necessary for Sangamo to comply with its obligations under each Sangamo Third Party Agreement, with all information needed in order to determine the requirement to make, and the amount of, any payment thereunder, to the extent resulting from the grant, maintenance or exercise of a sublicense to Pfizer and (ii) promptly (but in no event later than [ * ] after Sangamo's submission of an invoice therefor) reimburse Sangamo for the full amount of each such payment under a Non-Exclusive Upstream License; provided Sangamo has provided Pfizer the information required under this Section 2.5 and any other information necessary for Pfizer to comply with any payment obligations and in the case of clause (ii), Pfizer has agreed under Section 2.5(a) to make such payments.

**2.6 Direct Licenses to Affiliates**. Pfizer may, from time to time, request that Sangamo grant licenses or sublicenses, to the Licensed Technology or Licensed Companion

Diagnostic Technology and of the same or narrowed scope as the licenses granted to Pfizer pursuant to Section 2.1(a), directly to Affiliates of Pfizer by giving written notice, upon receipt of which Sangamo agrees to enter into and sign a separate direct license or sublicense agreement with such designated Affiliate of Pfizer. All such direct license or sublicense agreements will be consistent with the terms and conditions of this Agreement, except for such modifications as may be required by applicable Laws in the country in which the direct license or sublicense will be exercised (excluding any such modifications that would require Sangamo to grant additional rights or take on additional obligations beyond what is set forth in this Agreement without any such modifications). The Parties further agree to make any amendments to this Agreement that are necessary to conform the combined terms of such direct licenses or sublicenses and this Agreement to the terms of this Agreement as set forth on the Effective Date. In connection with any such direct license, Sangamo may require that Pfizer guarantee the performance of its Affiliate. All reasonable costs of making such direct license or sublicense agreement(s) or amending this Agreement, including Sangamo's reasonable attorneys' fees, under this Section 2.6 will be borne by Pfizer and reimbursed to Sangamo within [ * ] of Sangamo's invoice therefor.

**2.7 Sangamo Third Party Agreements**.

**(a) Maintenance of Sangamo Third Party Agreements.** Sangamo will maintain in full effect and will perform all of its obligations in a timely manner under each of the Sangamo Third Party Agreements. Absent Pfizer's prior written consent (which may be provided, conditioned or withheld in Pfizer's sole discretion), Sangamo will not terminate, modify or amend any Sangamo Third Party Agreements in any manner that would (i) adversely affect any of the rights granted to Pfizer under this Agreement, (ii) impose any obligations upon Pfizer hereunder that are in addition to those obligations that exist under this Agreement based on the Current Licenses as they exist on the Effective Date or each Upstream License as it exists when it becomes an Upstream License pursuant to Section 2.5 or (iii) adversely affect Sangamo's ability to perform its obligations under this Agreement. Further, Sangamo will not take any action or omit to take any action that would cause it to be in material breach of any Sangamo Third Party Agreements or that would give rise to a right of any Third Party Licensor to terminate the applicable Sangamo Third Party Agreements.

**(b) Communications and Performance**. Notwithstanding anything to the contrary in this Agreement, Sangamo will facilitate any communications between Pfizer and any Third Party Licensor required for Pfizer to exercise the rights granted to it pursuant to this Article 2 and will use Commercially Reasonable Efforts to cause each applicable Third Party Licensor to perform all of its obligations under the applicable Sangamo Third Party Agreement that are necessary to effectuate the rights granted to Pfizer under this Agreement.

**(c) Breach of Sangamo Third Party Agreement**. If Sangamo receives notification from the applicable Third Party Licensor of any actual or potential breach by Sangamo, or otherwise becomes aware of its breach, of any Sangamo Third Party Agreement, which breach if uncured could give rise to the termination of the applicable Sangamo Third Party Agreement, then Sangamo will promptly notify Pfizer of such breach, such notice to include a

copy of the notification (if any) received from such Third Party Licensor. To the extent that any act or omission on the part of Pfizer is the cause of such breach of a Sangamo Third Party Agreement, Pfizer will take all actions and provide Sangamo with all cooperation necessary to cure such breach, in each case as reasonably requested by Sangamo and at Pfizer's sole cost and expense. To the extent that Pfizer is not the cause of such breach of a Sangamo Third Party Agreement, Sangamo will have the first opportunity to cure such breach in accordance with a plan to be mutually agreed upon by the Parties in writing, acting reasonably (each, a "Cure Plan"). If (a) Sangamo does not use diligent efforts to cure such breach pursuant to the applicable Cure Plan or (b) Sangamo is unable to cure such breach in accordance with the applicable Cure Plan or it becomes reasonably apparent that Sangamo will not be able to cure such breach pursuant to the applicable Cure Plan, in each case during the applicable cure period, then Pfizer may, at its election and in its sole discretion, act reasonably to cure such breach and Sangamo will take all actions and provide Pfizer with all cooperation to cure such breach, in each case as reasonably requested by Pfizer. Further, if Pfizer is not the cause of such breach, then Sangamo will, at Pfizer's sole election, (i) reimburse Pfizer for all reasonable out-of-pocket costs and expenses incurred by or on behalf of Pfizer or any of its Representatives in connection with curing such breach; or (ii) permit Pfizer to offset any such reasonable out-of-pocket costs and expenses incurred by or on behalf of Pfizer or any of Pfizer's Representatives in connection with curing such breach against Pfizer's future payment obligations to Sangamo (or any of its successor or assigns) under this Agreement.

**(d) Termination of any Sangamo Third Party Agreement**. In the event that any Sangamo Third Party Agreement is terminated by the applicable Third Party Licensor and this Agreement, as of the effective date of such termination, has not otherwise been terminated in its entirety, Pfizer, to the extent permitted by such Sangamo Third Party Agreement (or if not permitted or addressed in such Sangamo Third Party Agreement, to the extent permitted by the applicable Third Party Licensor), will have the right, at Pfizer's election, to convert the sublicenses granted under this Agreement by Sangamo to Pfizer under the Licensed Technology licensed to Sangamo pursuant to such Sangamo Third Party Agreement to a direct license from the applicable Third Party Licensor to Pfizer on the terms and conditions contained in such Sangamo Third Party Agreement (with Pfizer assuming the applicable obligations of Sangamo thereunder) or such other terms and conditions as may be negotiated by Pfizer and the applicable Third Party Licensor. In the event Pfizer enters into any such direct license with a Third Party Licensor, Sangamo will, at Pfizer's sole election, (i) reimburse Pfizer for all reasonable out-of-pocket costs and expenses incurred by or on behalf of Pfizer or any of its Representatives in connection with entering into and exercising its rights or performing under such direct license to the extent that Sangamo would have borne such costs if the applicable Sangamo Third Party Agreement had not been terminated; or (ii) permit Pfizer to offset any such reasonable out-of-pocket costs and expenses (to the extent not reimbursed pursuant to clause (i) above) incurred by or on behalf of Pfizer or any of Pfizer's Representatives in connection with entering into and exercising its rights or performing under such direct license to the extent that Sangamo would have borne such costs if the applicable Sangamo Third Party Agreement had not been terminated, against Pfizer's future payment obligations to Sangamo (or any of its successor or assigns) under this Agreement.

**(e) Consents and Waivers**. In the event that any provision in any Sangamo Third Party Agreement which conflicts with this Agreement or adversely impacts the activities contemplated under this Agreement comes to the attention of either Sangamo or Pfizer, then either the Parties will (i) in Pfizer's sole discretion, amend this Agreement to avoid such conflict or (ii) Sangamo, in consultation with Pfizer, will use Commercially Reasonable Efforts to obtain any and all additional required consents or waivers from the applicable Third Party Licensor(s) which may be necessary to align the conflicting provision(s) of the applicable Sangamo Third Party Agreement with this Agreement and to permit the activities contemplated by this Agreement. Notwithstanding the foregoing, Sangamo shall not have any obligation to obtain or attempt to obtain any rights to file, prosecute, maintain, enforce, defend or extend any Patent within the Licensed Technology that is non-exclusively licensed to Sangamo pursuant to a Sangamo Third Party Agreement.

**2.8 Right of Reference**. Sangamo hereby grants to Pfizer, its Affiliates and its Sublicensees a "Right of Reference," as that term is defined in 21 C.F.R. § 314.3(b) (or any analogous Law recognized outside of the United States), to all regulatory filings Controlled by Sangamo or its Affiliates that relate to any Compound or Product, solely for purposes of Developing, Manufacturing and Commercializing Products in the Field in the Territory, and Sangamo will provide a signed statement to this effect, if requested by Pfizer, in accordance with 21 C.F.R. § 314.50(g)(3) (or any analogous Law outside of the United States).

**2.9 Initial Data Transfer**. Within a reasonable time not to exceed [ * ] following the Effective Date, Sangamo will disclose to Pfizer true, accurate and complete copies of all Licensed Know-How, in each case to the extent developed by Sangamo on or prior to the Effective Date and in such format as Pfizer may reasonably request (including by download of digital files to a secure website or e-room designated and controlled by Pfizer).

**2.10 Continuing Disclosure and Knowledge Transfer**. On a [ * ] basis, or more frequently at the reasonable request of Pfizer during the Term, Sangamo, to the extent not previously provided to Pfizer, will provide to Pfizer a written summary of all Licensed Technology other than Research Program Technology developed by Sangamo or that otherwise comes into the Control of Sangamo. Further, Sangamo will make appropriate personnel available to Pfizer at reasonable times and places and upon reasonable prior notice for the purpose of assisting Pfizer to understand and use the Licensed Technology in connection with Pfizer's Development of Compounds and Products.

## ARTICLE 3
## RESEARCH PLAN

**3.1 Scope of Research and Research Plan.** Beginning on the Effective Date and ending on the third anniversary thereof, unless extended to the fourth anniversary pursuant to Section 1.42 (the "Research Term"), Pfizer and Sangamo will collaborate to conduct research to identify, screen and evaluate Compounds in accordance with a research plan as set forth on **Exhibit B** (the "Research Plan") and the terms and conditions set forth in this Article 3.

**3.2 Allocation of Responsibilities**.

**(a) General**. Each Party will use Commercially Reasonable Efforts to perform its obligations under the Research Plan in a professional and timely manner. Further, each Party will perform its obligations under the Research Plan in compliance with all Laws applicable to its activities under the Research Plan.

**(b) Sangamo Research Obligations; Subcontractors**. Sangamo will devote a total of [ * ] full-time equivalents of qualified personnel over the course of the Research Term to conduct Sangamo's activities under the Research Plan, each of whom will devote his or her allocated efforts performing such other activities as may be required under the Research Plan**.** Sangamo will not subcontract any of its responsibilities under the Research Plan without Pfizer's prior written consent; *provided* that any subcontractors expressly identified in the Research Plan to conduct specific activities thereunder shall be deemed to have received such consent from Pfizer. Sangamo shall be responsible for the management of all permitted subcontractors. The engagement by Sangamo or its Affiliate of any subcontractor in compliance with this Section 3.2(b) shall not relieve Sangamo of its obligations under this Agreement or the Research Plan. Any agreement between Sangamo or its Affiliate and a permitted subcontractor pertaining to the Research Plan activities shall be consistent with the provisions of this Agreement including (i) an obligation to assign all intellectual property rights generated during its performance of such Research Plan to Sangamo and (ii) terms and conditions under which such Third Party is obligated to preserve the confidentiality of any Confidential Information of Pfizer received by such Third Party from Sangamo that are at least as restrictive as those described in Article 7. Furthermore, unless otherwise agreed by Pfizer in writing, prior to or at the time of engagement of any subcontractor to perform any obligations hereunder, Sangamo or its Affiliate shall cause such subcontractor to agree in writing to be bound by terms providing for Pfizer rights no less favorable to Pfizer than the rights granted to Pfizer in this Agreement.

**(c) Sangamo Personnel Matters**. Sangamo acknowledges and agrees that it is solely responsible for the compensation of its personnel assigned to the Research Plan, and shall be responsible for withholding all national, state, local or other applicable taxes and similar items for such personnel. Sangamo also shall be responsible for all other employer related obligations with respect to such personnel, including providing appropriate insurance coverage and employee benefits, and making all other deductions required by law affecting the gross wages of each employee. Sangamo personnel assigned to the Research Plan activities are not nor shall they be deemed to be employees of Pfizer.

**(d) Oversight of Research Activities**. The JRC will oversee and retain final decision making authority with respect to all research activities performed under this Agreement, in accordance with the terms of this Agreement. Without limiting the foregoing, the JRC will oversee the evaluation of all Compounds identified by Sangamo and will provide feedback and guidance to Sangamo regarding such Compounds.



[ * ] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

**(e) Disclosure and Knowledge Transfer Obligations**. Without limiting Sangamo's obligations pursuant to Section 2.9, Section 2.10, and Section 3.2(b), during the Research Term:

(i) the Parties shall meet [ * ], so that each Party may furnish to the other a presentation describing the data related to the Compounds and Products developed by such Party in connection with the Research Plan, in each case in such format as the Parties may reasonably agree (including by download of digital files to a secure website or e-room designated and controlled by Pfizer);

(ii) in addition to the [ * ] meetings specified in (i), the selected personnel of the Parties shall have calls on a more frequent ad hoc basis for scientific discussion, including discussions related to the development of assays at Pfizer and the transfer of such assays to Sangamo for use under the Research Program;

(iii) Sangamo shall furnish Pfizer complete copies of data generated by Sangamo, if any, pursuant to the [ * ] assays in work package 1 for the up to [ * ] Compounds to be delivered by Sangamo to Pfizer pursuant to the Research Plan, and all assays in work packages 2 and 3 of the Research Plan;

(iv) to the extent provided in the Research Plan, Sangamo shall disclose and provide to Pfizer research grade samples of or nucleic acid sequences of each zinc finger protein identified by Sangamo as a potential Lead Development Compound within a commercially reasonable period not to exceed [ * ] of the discovery of each such zinc finger protein;

(v) each party shall promptly notify the other Party of any suspected or actual research misconduct, issues pertaining to data integrity or any other information that could reasonably signify or result in a lack of confidence in the accuracy or collection methods of data, each as such may relate to the activities being conducted under the Research Plan; and

(vi) Sangamo shall provide Pfizer with all reasonable assistance necessary or desirable (1) to effect the timely and orderly transfer of Licensed Technology to Pfizer for Pfizer's use under the Research Plan, and (2) to effect the timely and orderly transfer of Licensed Technology and Compounds to Pfizer in order to enable Pfizer to perform its obligations under the Research Plan.

**(f) Modifications**. Pfizer and its Representatives shall not modify the amino acid sequence of any Compound without the prior written consent of Sangamo. For clarity, Pfizer and its Representatives may modify the nucleic acid sequence encoding a Compound, provided that such modification does not modify the amino acid sequence of such Compound, without the prior written consent of Sangamo.

**3.3 Research Governance**.

**(a) Collaboration Management.**

(i) *Program Directors*. Each Party will appoint a program director to oversee all activities conducted under the Research Plan (each, a "Program Director" and together the "Program Directors"). Each Party may change its designated Program Director at any time upon written notice to the other Party. The Program Directors will coordinate the efforts of their respective Party in conducting activities under the Research Plan.

(ii) *Alliance Managers*. Each Party will appoint a single individual to act as the primary point of contact between the Parties to support the activities under the Research Plan (the "Alliance Managers"). Each Party may change its designated Alliance Manager at any time upon written notice to the other Party. The Alliance Managers will:

(1) use good faith efforts to attend (either in person or by telecommunications) all meetings of the JRC, but will be non-voting members at such meetings; and

(2) be the first point of referral for all matters of conflict resolution, and bring disputes to the attention of the JRC in a timely manner.

**(b) Joint Research Committee.**

(i) *Composition*. Within [ * ] after the Effective Date, the Parties will establish a Joint Research Committee, comprised of [ * ] representatives of Sangamo (including the Program Director for Sangamo) and [ * ] representatives of Pfizer (including the Program Director for Pfizer). The JRC representatives for each of Pfizer and Sangamo will be referred to herein as the "Pfizer JRC Members" and the "Sangamo JRC Members," respectively. Each Party may replace its representatives to the JRC at any time upon notice to the other Party, *provided that* at all times an equal number of representatives from each Party are appointed to the JRC. Each Party may invite non-voting employees and consultants to attend meetings of the JRC. All members of the JRC and any invitees of either Party described above will agree in writing to be bound to obligations of confidentiality and assignment of inventions no less restrictive than those that bind the Parties under this Agreement.

(ii) *Committee Chair*. The JRC will be chaired by a Pfizer JRC Member (the "JRC Chair"). Pfizer may replace the JRC Chair at any time upon notice to Sangamo. The responsibilities of the JRC Chair will be:

(1) to notify each Party at least [ * ] in advance of each JRC meeting;

(2) to collect and organize agenda items for each JRC meeting; and

(3) to prepare the written minutes of each JRC meeting and circulate such minutes for review and approval by the Parties, and identify action items to be carried out by the Parties.

(iii) *Meetings*. During the Research Term, the JRC will meet on a [ * ] basis (or less or more frequently as the JRC so determines), either in-person or by audio or video teleconference. Meetings of the JRC will occur at such times and places as mutually agreed by the Parties; provided, however, that no more than [ * ] in-person meetings will be required in any Calendar Year. Any sub-committees or working groups established in accordance with Section 3.3(b)(iv)(4) may meet via audio or video teleconference on a regular basis and in-person at such times and places as the Parties may agree. Meetings of the JRC will only occur if at least one representative of each Party is present at the meeting or participating by teleconference or videoconference. Each Party will be responsible for, and will not be entitled to any reimbursement from the other Party with respect to, any and all personnel costs or expenses (including travel expenses) which are incurred by or on behalf of its personnel in connection with participation in any JRC meetings or sub-committee or working group meetings, or any other travel required to be undertaken by either Party's personnel in connection with the performance of the Agreement. The Parties will endeavor to schedule meetings of the JRC at least [ * ] in advance. The JRC Chair will use good faith efforts to (i) prepare and circulate to Sangamo each JRC meeting agenda no later than [ * ] prior to the scheduled date for each JRC meeting and (ii) circulate for review and approval by Sangamo written minutes of each JRC meeting within [ * ] after such meeting. The Parties will agree on the minutes of each meeting promptly, but in no event later than the next meeting of the JRC.

(iv) *Responsibilities*. The JRC will coordinate and provide operational and strategic oversight of the activities to be performed under the Research Plan by each Party and, within such scope will:

(1) monitor and assess the progress of activities under the Research Plan;

(2) revise and approve any revision to the Research Plan;

(3) identify potential Compounds;

(4) form such other committees and sub-committees as the JRC may deem appropriate, *provided that* such committees and sub-committees may make recommendations to the JRC but may not be delegated JRC decision-making authority;

(5) address such other matters relating to the activities of the Parties under the Research Plan as either Party may bring before the JRC, including any matters that are expressly for the JRC to decide as provided in this Agreement; and

(6) attempt to resolve any disputes between the Parties with respect to the performance of activities under the Research Plan on an informal basis, subject to Section 3.3(b)(v).

(v) *Decision-making*. Notwithstanding the number of Pfizer JRC Members or Sangamo JRC Members, each Party will have one (1) vote, and the JRC will make

decisions on a unanimous basis. The JRC will use good faith efforts to reach agreement on any and all matters properly brought before it and within the scope of JRC's responsibility. If, despite such good faith efforts, the JRC is unable to reach unanimous agreement on a particular matter, within [ * ] after the JRC first meets to consider such matter, or such later date as may be mutually acceptable to the Parties (each such matter, a "Disputed Matter"), then either Party may refer that Disputed Matter for resolution by the appropriate Executive Officer of each Party, and such Executive Officers will promptly initiate discussions in good faith to resolve such Disputed Matter. If the Executive Officers of each Party are unable to resolve the Disputed Matter within [ * ] of it being referred to them, then [ * ] with respect to all Disputed Matters except that [ * ] (a) [ * ] or (b) [ * ].

(vi) *Limits on JRC Authority*. Notwithstanding any provision of this Section 3.3 to the contrary, (i) each Party will retain the rights, powers and discretion granted to it under this Agreement and no such rights, powers, or discretion will be delegated to or vested in the JRC unless such delegation or vesting of rights is expressly provided for in this Agreement or the Parties expressly so agree in writing, (ii) the JRC will not have the power to amend this Agreement or otherwise modify, waive or determine compliance with this Agreement in any manner and (iii) neither Party will require the other Party to (A) breach any obligation or agreement that such other Party may have with or to a Third Party to the extent such obligation or agreement existed prior to the Effective Date or (B) perform any activities that are materially different or greater in scope or more costly than those provided for in the Research Plan then in effect.

(vii) *JRC Term*. The JRC will be dissolved immediately upon expiration of the Research Term unless the Parties otherwise agree in writing.

**3.4 Research Plan Expenses.** Each Party will bear all costs and expenses it incurs in connection with its activities under the Research Plan.

**3.5 Transfer of Materials from Pfizer to Sangamo.**

**(a) Transfer**. From time to time during the Research Term, Pfizer may, in its sole discretion or as specified in the Research Plan, provide Sangamo with tangible chemical or biological materials (the "Pfizer Materials"). Pfizer represents and warrants to Sangamo that Pfizer has the right to provide the Pfizer Materials to Sangamo for the uses authorized herein. Except as expressly set forth in the preceding sentence, the Pfizer Materials are provided by Pfizer on an "as-is" basis without any representation or warranty of any type, express or implied, including any representation or warranty of merchantability, non-infringement, title or fitness for a particular purpose, each of which is hereby expressly disclaimed by Pfizer.

**(b) Permitted Use of Pfizer Materials**. Sangamo will use the Pfizer Materials solely in connection with conducting the activities specified in the Research Plan (the "Permitted Activities"). Without limiting the generality of the foregoing, except in the performance of the Permitted Activities, Sangamo will not (a) other than expressly permitted in the Research Plan, make or attempt to make any analogues, progeny or derivatives of, or

modifications to, the Pfizer Materials or attempt to reverse engineer, characterize or in any way try to ascertain the identity, chemical structure, sequence, mechanism of action or composition of the Pfizer Material, or (b) use the Pfizer Materials for Sangamo's own benefit or for the benefit of any of its Affiliates or any Third Party. Further, Sangamo will not administer any Pfizer Material to any human. Sangamo will comply with all Laws applicable to the handling and use of the Pfizer Materials. Sangamo will retain possession over the Pfizer Materials and not provide any Pfizer Materials to any of its Affiliates or to any Third Party without Pfizer's prior written consent, which consent may be withheld in Pfizer's sole discretion. Notwithstanding anything in this Agreement to the contrary, Pfizer shall not be obligated to disclose at any time the identity, structure, composition of, or other information concerning the Pfizer Materials.

**(c) Unauthorized Use of Pfizer Materials**. If Sangamo uses any Pfizer Material in any manner other than in the performance of the Permitted Activities, then any and all results of such unauthorized use, whether patentable or not, will belong solely and exclusively to Pfizer. Sangamo, on behalf of itself and its Affiliates, hereby assigns and agrees to assign to Pfizer all of Sangamo's and its Affiliates' right, title and interest in and to all such discoveries and inventions. Sangamo further agrees to cooperate with Pfizer to execute and deliver any and all documents that Pfizer deems reasonably necessary to perfect and enforce Pfizer's rights under this Section 3.5(c). Nothing in this Section 3.5(c) will limit in any way any other remedy that Pfizer may have under this Agreement as a result of Sangamo's unauthorized use of any Pfizer Materials.

**(d) Title to Pfizer Materials**. All right, title and interest in and to the Pfizer Materials will remain the sole and exclusive property of Pfizer notwithstanding the transfer to and use by Sangamo of the same.

**(e) Return of Pfizer Materials**. At the end of the Research Term (or such earlier time as Pfizer may request in writing), Sangamo will either destroy or return to Pfizer, at Pfizer's sole discretion, all unused Pfizer Materials.

**(f) Ownership of Material Improvements**. "Pfizer Material Improvement" means any idea, concept, discovery, invention, Know-How, trade secret, technique, methodology, modification, innovation, result, improvement, writing, documentation, data, research material or right (whether or not protectable under any patent or other intellectual property law) that constitutes any improvement or enhancement to, or a derivative or modification of, any Pfizer Material or any method of making or using any Pfizer Material. For clarity, the insertion by Sangamo of any nucleic acid sequence, whether encoding a Compound, promoter, or other component, into any Pfizer Material [ * ] shall not be deemed an improvement or enhancement to, or a derivative or modification of such Pfizer Material and shall not be deemed a Pfizer Material Improvement. For further clarity, any idea, concept, discovery, invention, Know-How, trade secret, technique, methodology, modification, innovation, result, improvement, writing, documentation, data, research material or right (whether or not protectable under any patent or other intellectual property law) that is conceived, discovered, invented, developed, created, made or reduced to practice or tangible medium by Sangamo in the performance of the Research Plan through the use of or otherwise involving or by reference to

any Pfizer Material that is not a Pfizer Material Improvement shall be Research Program Know-How, and ownership of such Research Program Know-How shall be determined in accordance with Section 6.1. Sangamo, on behalf of itself and its Affiliates, hereby assigns and agrees to assign to Pfizer all of Sangamo's and its Affiliates' right, title and interest in and to any and all Pfizer Material Improvements. Sangamo will promptly notify Pfizer of any Pfizer Material Improvement made by Sangamo or its Affiliates and will cooperate fully in obtaining patent and other proprietary protection for such Pfizer Material Improvement. Such protection will be obtained in the name of Pfizer and at Pfizer's cost and expense, and Sangamo will, and will cause its Affiliates to, execute and deliver all requested applications, assignments and other documents, and take such other actions as Pfizer may reasonably request, in order to perfect and enforce Pfizer's rights in any Pfizer Material Improvement.

**(g) Safe Harbor Activities.** Notwithstanding anything to the contrary in this Agreement, nothing in this Agreement shall be deemed to prevent or restrict in any way the ability of Pfizer or its Affiliates or Sangamo or its Affiliates to conduct any activities in the Territory, which activities would be allowed under any safe harbor, research exemption, government or executive declaration of urgent public health need, or similar right available in law or equity if conducted by a Third Party.

**(h) Confidentiality**. Sangamo's obligations under this Section 3.5 are in addition to, and will in no way limit, its obligations under Article 7 with respect to the Pfizer Materials.

## ARTICLE 4
## PRODUCT DEVELOPMENT AND COMMERCIALIZATION

**4.1 General**. Subject to the provisions of Article 3 and Section 4.2, Pfizer will have sole authority over and control of the Development, Manufacture, Regulatory Approval and Commercialization of Products in the Field and will retain final decision-making authority with respect thereto.

**4.2 Diligence**.

**(a) Development Diligence.** Pfizer will use its Commercially Reasonable Efforts to Develop and seek Regulatory Approval for [ * ] Product [ * ] in the Field [ * ]. Pfizer will [ * ] with respect to the Development or Regulatory Approval of Products under this Agreement.

**(b) Commercial Diligence.** Pfizer will use its Commercially Reasonable Efforts to Commercialize [ * ] Product [ * ] in the Field [ * ] in the Territory where Pfizer or its Affiliates or Sublicensee has received Regulatory Approval for such Product [ * ]. Pfizer will [ * ] with respect to the Commercialization of Products under this Agreement.

**(c) Exceptions to Diligence Obligations.** Notwithstanding any provision of this Agreement to the contrary, Pfizer will be relieved of all Pfizer Diligence Obligations to the extent that Sangamo fails to fulfill its obligations under the Research Plan and such failure prevents Pfizer from fulfilling such Pfizer Diligence Obligations.

**(d) [ * ] Pfizer Diligence Obligations.** Without in any way [ * ] obligations under this Agreement:

(i) [ * ] described in Section [ * ] Pfizer Diligence Obligations under this Agreement with respect to activities that are [ * ]; and

(ii) [ * ] as set forth in Section [ * ] Pfizer Diligence Obligations under this Agreement to the date of such payment that are [ * ].

For the avoidance of doubt, the provisions of Sections 4.2(d)(i) and (ii) are intended only [ * ]. [ * ] the Pfizer Diligence Obligations [ * ] set forth in Sections 4.2(d)(i) and (ii), above, *provided that* Pfizer [ * ].

**(e) Assertion of Pfizer Diligence Obligation Claims**. If Sangamo becomes aware of facts that form a reasonable basis to allege that Pfizer has failed to meet any Pfizer Diligence Obligation, then Sangamo will promptly notify Pfizer in writing of such potential alleged performance failure (each such potential alleged performance failure, a "Diligence Issue"). Promptly upon Pfizer's receipt of any notice of a Diligence Issue pursuant to this Section 4.2(e), the Pfizer Program Director will contact the Sangamo Program Director to discuss the specific nature of such Diligence Issue and seek to identify an appropriate corrective course of action. If, no later than [ * ] after Pfizer's receipt of such a notice, (i) the Parties have not reached consensus regarding whether Pfizer has failed to satisfy its obligations pursuant to Section 4.2(a) and Section 4.2(b) and (ii) the Parties' respective Program Directors have not agreed upon an appropriate corrective course of action for such Diligence Issue, then at Sangamo's request such Diligence Issue will be escalated and resolved pursuant to the dispute resolution provisions set forth in Section 12.6. If Sangamo fails to notify Pfizer of a Diligence Issue pursuant to this Section 4.2(a) and Section 4.2(b) within [ * ] after the date that Sangamo first discovers such Diligence Issue, then [ * ] with respect to such Diligence Issue.

**(f) Remedies for Breach of Pfizer Diligence Obligations**. If Pfizer materially breaches any Pfizer Diligence Obligation with respect to a particular Product in a particular country and fails to remedy such breach within [ * ] of Pfizer's receipt of notice of such breach from Sangamo, then Sangamo may, in its sole discretion, elect to either (a) terminate this Agreement pursuant to the provisions of Section 8.2(b) on a Product-by-Product and country-by-country basis (for the applicable Product and country) or (b) convert any exclusive license or sublicense granted to Pfizer under this Agreement with respect to the applicable Product in the applicable country in the Territory into non-exclusive license or sublicense, as applicable. Notwithstanding, the foregoing, in the event of a good faith dispute regarding any such Pfizer Diligence Obligations, the aforementioned [ * ] cure period shall be tolled pending resolution of such dispute in accordance with the applicable provisions of this Agreement.

**(g) Performance by Pfizer's Affiliates or Sublicensees**. For avoidance of doubt, any actions taken by Pfizer's Affiliates or Sublicensees (or their respective subcontractors) under this Agreement shall be treated as actions taken by Pfizer in regard to satisfaction of the requirements of this Section 4.2.

**4.3 Regulatory Matters**.

**(a) Regulatory Reporting**. Pfizer or its designated Affiliate(s) will have the sole authority to make or file all filings, reports and communications with all Regulatory Authorities with respect to any Product in the Field in the Territory, including all reports required to be filed in order to obtain or maintain any Regulatory Approvals granted for Products in the Field in the Territory and adverse drug experience reports. Upon Pfizer's request and at Pfizer's sole expense for all hours in excess of the first [ * ], Sangamo will provide to Pfizer any data or other information included within the Licensed Technology in Sangamo's possession and otherwise provide reasonable assistance to Pfizer in connection with any such filings, reports and communications.

**(b) Regulatory Approvals**. Pfizer or its designated Affiliate(s) will have the sole authority to prepare and file applications, in its own name, for Regulatory Approval for Products in the Field in the Territory, including communicating with any Regulatory Authority both prior to and following Regulatory Approval. Further, Sangamo will take all actions and provide all assistance reasonably requested by Pfizer and at Pfizer's sole expense to effect the assignments in this Section 4.3(b).

**(c) Cooperation**. If reasonably requested by Pfizer, Sangamo shall reasonably assist and cooperate with Pfizer in connection with the preparation of filings, reports and communications to Regulatory Authorities with respect to Product in the Field in the Territory, at Pfizer's sole expense. Sangamo will and will cause its Affiliates to cooperate with Pfizer and all Pfizer Representatives in the event of any inspection by a Regulatory Authority related to any Product or any activities to be performed under this Agreement, at Pfizer's sole expense.

**4.4 Commercialization Activities.**

**(a) General.** Subject to Section 4.2, Pfizer will have sole and exclusive control over all matters relating to the Commercialization of Products in the Field in the Territory, including sole and exclusive control over (a) pricing of Products and (b) the negotiation of Product pricing with Regulatory Authorities and other Third Parties, in each case in the Field in the Territory.

**(b) Branding.** Pfizer or its designated Affiliates or Sublicensees will select and own all Trademarks and Copyrights used in connection with the Commercialization of any and all Products in the Field in the Territory. Neither Sangamo nor its Affiliates will use or seek to register, anywhere in the world, any Trademark which is confusingly similar to any Trademark used by or on behalf of Pfizer, its Affiliates or Sublicensees in connection with any Product.



[ * ] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

**(c) Manufacturing.** Pfizer will have the exclusive right to Manufacture such Products itself or through one or more Affiliates or Third Parties selected by Pfizer in its sole discretion. For clarity, Pfizer will have [ * ] with respect to the Manufacture of Products except to the extent necessary to [ * ].

**4.5 Progress Reporting.**

**(a) Development.** Following the Research Term, Pfizer will provide Sangamo with [ * ] presentation summarizing Pfizer's, its Affiliates, and its Sublicensees' Development activities with respect to the Products since the last meeting at a level of detail sufficient to enable Sangamo to determine Pfizer's compliance with the Pfizer Diligence Obligations.

**(b) Commercialization.** After the first approval of a BLA for a Product, Pfizer shall provide Sangamo with [ * ] written reports detailing Pfizer's, its Affiliates, and its Sublicensees' Commercialization activities with respect to the Products at a level of detail sufficient to enable Sangamo to determine Pfizer's compliance with the Pfizer Diligence Obligations.

**4.6 Other Pfizer Programs**. Sangamo understands and acknowledges that Pfizer may have present or future initiatives or opportunities, including initiatives or opportunities with its Affiliates or Third Parties, involving products, programs, technologies or processes that are similar to, and in some instances may compete with, a Product, program, technology or process covered by this Agreement. Sangamo acknowledges and agrees that except for Section 2.4, nothing in this Agreement will be construed as a representation, warranty, covenant or inference that Pfizer will not itself Develop, Manufacture or Commercialize or enter into business relationships with one or more of its Affiliates or Third Parties to develop, Manufacture or Commercialize products, programs, technologies or processes that are similar to or that may compete with any Product, program, technology or process covered by this Agreement, provided that, for clarity, Pfizer will not use Sangamo's Confidential Information in breach of this Agreement, including in the course of or to further the development, Manufacture or Commercialization of any products, programs, technologies or processes that are similar to or that may compete with any Product.

**ARTICLE 5**
**FINANCIAL PROVISIONS**

**5.1 Technology Access Fee.** Pfizer shall make a one-time, non-refundable, non-creditable payment of twelve million U.S. dollars ($12,000,000) to Sangamo within [ * ] after the Effective Date of the Agreement. Should Sangamo not identify any Compounds prior to [ * ], the Parties shall terminate this Agreement and [ * ]. The Parties acknowledge that [ * ] may also be needed.

**5.2 Milestone Payments.**

**(a) Development Milestones**. Pfizer shall make the following one-time, non-refundable, non-creditable payments (each a "Development Milestone Payment") to Sangamo within [ * ] following the first occurrence of the applicable event listed below [ * ] Lead Development Compound or Product to achieve such event (each, a "Development Milestone Event").

| Development Milestone Event | Development Milestone Payment |
|---|---|
| [ * ] | $ [ * ] |
| [ * ] | $ [ * ] |
| [ * ] | $ [ * ] |
| [ * ] | $ [ * ] |
| **Total potential Development Milestone Payments** | **$ 60,000,000** |

**(b) Sales Milestones**. Pfizer shall pay Sangamo the following [ * ] payments when aggregate Net Sales of [ * ] Products in the Territory in a given Pfizer Year first reach the respective thresholds indicated below:

| Sales Milestone Event | Sales Milestone Payment |
|---|---|
| [ * ] | $ [ * ] |
| [ * ] | $ [ * ] |
| [ * ] | $ [ * ] |

**(c) Notice and Payment**. The Party that achieves any milestone event set forth in Section 5.2(a) or Section 5.2(b) shall notify the other Party in writing within [ * ] after the achievement of any milestone event, and Pfizer shall pay to Sangamo the applicable payment within [ * ] after receipt from Sangamo of a proper invoice pursuant to Section 5.5 for such milestone event. If Sangamo believes any milestone event has occurred and has not received a written notice of same from Pfizer, it may so notify Pfizer in writing and invoice Pfizer for the corresponding payment, and in that case shall provide to Pfizer documentation or other information that supports its belief. Any dispute under this Section 5.2(c) that relates to whether or not a milestone event has occurred shall be resolved in accordance with Section 12.6.

**5.3 Royalty Payments.**

**(a) Royalty Rates**. On a Product-by-Product basis, Pfizer shall pay Sangamo non-refundable, non-creditable royalties based on annual aggregate Net Sales of each Product in the Territory during such Product's Royalty Term at the following rates:

| **Amount of Aggregate Territory-wide Net Sales** | **Royalty Rate** |
|---|---|
| Net sales up to and including [ * ] | [ * ]% |
| Net sales above [ * ] up to and including [ * ] | [ * ]% |
| Net sales above [ * ] | [ * ]% |

Each Royalty Rate set forth in the table above will apply only to that portion of the Net Sales of a given Product in the Territory during a given Pfizer Year that falls within the indicated range. An example calculation of royalties under this Section 5.3(a) is set forth below.

By way of example only, if (i) Pfizer, its Affiliates or its Sublicensees sell two Products in the Territory during a given Pfizer Year, (ii) Net Sales of the first Product in the Territory during such Pfizer Year are $[ * ] and (iii) Net Sales of the second Product in the Territory during such Pfizer Year are $[ * ], then the royalties payable by Pfizer under this Section 5.3(a) during such Pfizer Year would be calculated as follows:

Royalty for first Product
[ * ]

Royalty for second Product
[ * ]

Total royalty payable for applicable Pfizer Year
[ * ]

**(b) Royalty Term**. Pfizer's royalty payment obligations under Section 5.3(a) shall expire, on a Product-by-Product and country-by-country basis, upon the latest of: (i) the expiration of the period during which the use for approved Indications, sale, offer for sale or importation of such Product in such country would absent a license or ownership interest, infringe a Valid Claim in the Licensed Technology in such country (considering Valid Claims of pending patent applications to be issued with the then-pending claims); (ii) the expiration of all Regulatory Exclusivity for such Product in such country; and (iii) [ * ] years after the First Commercial Sale of such Product in any Major Market Country (the "Royalty Term"). For the avoidance of doubt, the Royalty Term for a given Product in a given country in the Territory (A) will not begin until the First Commercial Sale of such Product in such country and (B) if not previously expired, will expire immediately upon termination of this Agreement.

**(c) Fully Paid-Up, Royalty Free License**. Following expiration of the Royalty Term for any Product in a given country, no further royalties will be payable in respect of sales of such Product in such country and, thereafter the license granted to Pfizer under Section 2.1(a)(i) with respect to such Product in such country will automatically become fully paid-up, perpetual, irrevocable and royalty-free.

**(d) Royalty Reductions.** The following adjustments will be made, on a Product-by-Product and country-by-country basis, to the royalties payable pursuant to Section 5.3(a).

(i) **Biosimilar Entry.** For any Pfizer Quarter in the applicable Royalty Term for a Product in a country in the Territory during which (1) a Biosimilar Product with respect to such Product is being sold in such country; and (2) the unit volume of such Biosimilar Product sold in such country in such Pfizer Quarter exceeds [ * ] of the combined unit volume of such Product and such Biosimilar Product sold in such country in such Pfizer Quarter, subject to Section 5.3(d)(vi), the royalties payable on Net Sales of such Product in such country in such Pfizer Quarter would be reduced by [ * ] of the amounts of royalties otherwise payable on such Net Sales pursuant to Section 5.3(a) for the remainder of the applicable Royalty Term, such reduction to be prorated appropriately in aggregate for the then-current Pfizer Quarter. The unit volume of the Product and Biosimilar Product shall be calculated using a mutually acceptable method and using market share data provided by a reputable and mutually agreed upon provider, such as IQVIA (f/k/a QuintilesIMS Health).

(ii) **Third Party Patents.** If Pfizer obtains a license from a Third Party to any Patent Right (other than a Specified Patent) owned by such Third Party in order to Manufacture or Commercialize any Product in a country in the Territory without infringing such Patent Right, whether directly or through any Pfizer Affiliate or Sublicensee, then, subject to Section 5.3(d)(vi), Pfizer shall have the right to deduct, from the royalty payment that would otherwise have been due pursuant to Section 5.3(a) with respect to Net Sales of such Product in such country in a particular Pfizer Quarter, an amount equal to [ * ] of the royalties paid by Pfizer to such Third Party pursuant to such license on account of the sale of such Product in such country during such Pfizer Quarter, such reduction to continue with any amounts not deducted carried over to future Pfizer Quarters until all such amounts have been expended.

(iii) **Expiry of Certain Valid Claim Coverage**. If with respect to any particular Product in any particular country in the Territory, the Royalty Term for such Product in such country extends beyond the date on which there is no Valid Claim Covering such Product with respect to its sale, offer for sale or importation in such country, then, subject to Section 5.3(d)(vi), the royalties payable on Net Sales of such Product in such country shall be reduced by [ * ] for each Pfizer Quarter for the remainder of the applicable Royalty Term.

(iv) **No Adjustment for Certain Sangamo Third Party Agreements**. Except as set forth in Schedule 2.1(d), Sangamo will be solely responsible for (i) all obligations (including any royalty or other obligations that relate to the Licensed Technology) under the Current Licenses and under the Exclusive Upstream Licenses and (ii) all payments to inventors of Licensed Technology, including payments under inventorship compensation Laws.

(v) **Existing Pfizer Third Party Agreements**. Pfizer will be solely responsible for all obligations (including royalty obligations) that relate to Products under its agreements with Third Parties that are in effect on or prior to the Effective Date.

(vi) Notwithstanding the foregoing, during any Pfizer Quarter in the Royalty Term for a Product in a country in the Territory, the operation of Sections 5.3(d)(i), (ii) or (iii) individually or in combination shall not reduce by more than [ * ] the royalties that would otherwise have been due under Section 5.3(a) with respect to Net Sales of such Product in such country during such Pfizer Quarter.

**(e) Reports and Payment**.

(i) **Cumulative Royalties**. The obligation to pay royalties under this Agreement will be imposed only once with respect to any sale of any Product.

(ii) **Royalty Statements and Payments.** Within [ * ] after the end of each Pfizer Quarter during the Royalty Term, Pfizer shall provide Sangamo with a report that contains the following information for the applicable Pfizer Quarter, on a Product-by-Product and country-by-country basis: (1) the amount of gross sales of each Product, (2) an itemized calculation of Net Sales showing deductions provided for in the definition of "Net Sales," (3) a calculation of the royalty due on such sales, including any reduction made in accordance with Section 5.3(d), and (4) the exchange rate for such country. No such reports will be due for any Product (A) before the First Commercial Sale of such Product or (B) after the Royalty Term for such Product has expired in all countries in the Territory. Pfizer shall pay in Dollars all royalty payments due to Sangamo for such Pfizer Quarter concurrently with the delivery of the royalty report or within [ * ] after the end of each Pfizer Quarter, whichever is sooner, provided that to the extent any royalties are payable by Pfizer hereunder on Net Sales of a Product in a country [ * ] that is [ * ], such royalties payable by Pfizer shall be [ * ] and [ * ].

**5.4 Currency; Late Payments**. All amounts payable and calculations under this Agreement will be in Dollars. As applicable, Net Sales and any royalty deductions in local currencies will be translated into Dollars in a manner consistent with Pfizer's normal practices

used to prepared its audited financial statements for public financial accounting purposes. If Sangamo does not receive payment of any sum due to it on the date due until [ * ] past such date, interest shall accrue on the sum due from the due date until the date of payment at the rate equal to the [ * ] rate effective for the date that payment was due, as reported by the Wall Street Journal (New York Edition). Such interest shall be computed on the basis of a year of [ * ] for the actual number of days payment is delinquent.

**5.5 Invoicing; Method of Payment.** Invoices must include the appropriate Pfizer Purchase Order (PO) number (provided that such PO number is provided to Sangamo by Pfizer within [ * ] after the Effective Date or within [ * ] before any payment is due), reference to the Agreement and type of payment due, itemized description of work completed (if applicable), amount owed and name and address to which the payment is to be sent. All invoices shall be clearly marked "INVOICE" and delivered by email to [ * ]. Should Pfizer dispute in good faith the nature or basis of any charges contained in any invoice submitted by Sangamo hereunder, Pfizer shall promptly provide written notice to Sangamo setting forth the reason for the dispute, which the Parties shall attempt to resolve in good faith in accordance with Section 12.6. Payment by Pfizer shall not result in a waiver of any of its rights under this Agreement. Each payment hereunder shall be made by electronic transfer in immediately available funds via either back wire transfer, an ACH (automated clearing house) mechanism or any other means of electronic funds transfer, at Pfizer's election, to the bank account as set forth below or as designated by Sangamo in writing to Pfizer at least [ * ] before the payment is due:

Bank Name: [ * ]
Beneficiary Account Number: [ * ]
Beneficiary Account Name: Sangamo Therapeutics, Inc.
International SWIFT BIC: [ * ]
ABA/Routing Number: [ * ]

**5.6 VAT; Withholding Taxes; Tax Cooperation.**

**(a) VAT**. It is understood and agreed between the Parties that any payments made under this Agreement are exclusive of any value added or similar tax (VAT), which shall be added thereon as applicable. Where VAT is properly added to a payment made under this Agreement, the Party making the payment will pay the amount of VAT only on receipt of a valid tax invoice issued in accordance with the laws and regulations of the country in which the VAT tax is chargeable.

**(b) Withholding Taxes**. Subject to Section 5.6(d) below, in the event any payments made pursuant to this Agreement become subject to withholding taxes under the laws or regulation of any jurisdiction, the Party making such payment shall deduct and withhold the amount of such taxes for the account of the payee to the extent required by applicable laws or regulations and such amounts payable to the payee shall be reduced by the amount of taxes deducted and withheld. Any such withholding taxes required under applicable laws or regulations to be paid or withheld shall be an expense of, and borne solely by, the payee.

**(c) Tax Cooperation**. To the extent that the Party making a payment is required to deduct and withhold taxes on any payments under this Agreement, the Party making such payment shall pay the amounts of such taxes to the proper Governmental Authority in a timely manner and promptly transmit to the payee an official tax certificate or other evidence of such withholding sufficient to enable the payee to claim such payments of taxes. The payee shall provide any tax forms to the Party making such payment that may be reasonably necessary in order for such Party not to withhold tax or to withhold tax at a reduced rate under an applicable bilateral income tax treaty. The payee shall use reasonable efforts to provide any such tax forms to the Party making the payment at least [ * ] prior to the due date for any payments for which the payee desires that the Party making the payment apply a reduced withholding rate. Each Party shall provide the other with reasonable assistance to enable the recovery, as permitted by Law, of withholding taxes, VAT, or similar obligations resulting from payments made under this Agreement, such recovery to be for the benefit of the Party bearing such withholding tax or VAT.

**(d)** Notwithstanding anything in this Agreement to the contrary, (i) if an action (including but not limited to any assignment (including pursuant to Section 12.2), any direction by Pfizer to Sangamo to grant a license or sublicense to any Affiliate of Pfizer pursuant to Section 2.6 (or otherwise), any sublicense of its rights or obligations under this Agreement, any transfer of payment obligations hereunder, or any failure to comply with applicable Laws or filing or record retention requirements) by a Party leads to the imposition of withholding tax liability or VAT on the other Party that would not have been imposed in the absence of such action or in an increase in such liability above the liability that would have been imposed in the absence of such action, then the sum payable by that Party (in respect of which such deduction or withholding is required to be made) shall be increased to the extent necessary to ensure that the other Party receives a sum equal to the sum which it would have received had no such action occurred, (ii) otherwise, the sum payable by that Party (in respect of which such deduction or withholding is required to be made) shall be made to the other Party after deduction of the amount required to be so deducted or withheld, which deducted or withheld amount shall be remitted in accordance with applicable law.

**5.7 Financial Records and Audit**. Each Party shall maintain complete and accurate records in sufficient detail to permit the other Party to confirm the accuracy of the amount of Development and Manufacture costs to be reimbursed, royalty payments and other amounts payable under this Agreement. Upon reasonable prior notice, such records shall be open during regular business hours for a period of [ * ] from the creation of individual records for examination by an independent certified public accountant selected by the auditing Party and reasonably acceptable to the audited Party for the sole purpose of verifying for the auditing Party the accuracy of the financial reports furnished by the audited Party pursuant to this Agreement or of any payments made, or required to be made, by or to the audited Party pursuant to this Agreement. Such audits may occur no more often than [ * ]. Such auditor shall not disclose the audited Party's Confidential Information to the auditing Party, except to the extent such disclosure is necessary to verify the accuracy of the financial reports furnished by the audited Party or the amount of payments to or by the audited Party under this Agreement. Any amounts shown to be owed but unpaid, or overpaid and in need of refund, shall be paid or refunded (as the

case may be) within [ * ] after the accountant's report, plus interest (as set forth in Section 5.4) from the original due date (unless challenged in good faith by the audited Party). The auditing Party shall bear the full cost of such audit unless such audit reveals an overpayment to, or an underpayment by, the audited Party that resulted from a discrepancy in the financial report provided by the audited Party for the audited period, which underpayment or overpayment is more than [ * ] of the amount set forth in such report, in which case the audited Party shall reimburse the auditing Party for the costs for such audit.

**5.8 Confidentiality.** Notwithstanding any provision of this Agreement to the contrary all reports and financial information of Pfizer, its Affiliates or its Sublicensees which are provided to or subject to review by Sangamo under this Article 5 will be deemed to be Pfizer's Confidential Information and subject to the provisions of Article 7.

**5.9 No Guarantee of Success**. Pfizer and Sangamo acknowledge and agree that payments to Sangamo pursuant to Section 5.2(a) and Section 5.3(a): (a) have been included in this Agreement on the basis that they are only payable or otherwise relevant if the applicable Milestone Event is achieved or Net Sales are made; (b) are solely intended to allocate amounts that may be achieved upon successful Development or Commercialization of such Product as applicable, between Pfizer (who will receive all Product sales revenues) and Sangamo; and (c) are not intended to be used and will not be used as a measure of damages if this Agreement is terminated for any reason, including pursuant to Pfizer's right to terminate for convenience, before any such success is achieved and such amounts become due; and (d) will only be triggered in accordance with the terms and conditions of such provisions. Pfizer and Sangamo further acknowledge and agree that nothing in this Agreement, or in any document or presentation provided by Pfizer to Sangamo or Sangamo to Pfizer prior to the Effective Date will be construed as representing any estimate or projection of (i) the successful Development or Commercialization of any Product under this Agreement, (ii) the number of Products that will or may be successfully Developed or Commercialized under this Agreement, (iii) anticipated sales or the actual value of any Products that may be successfully Developed or Commercialized under this Agreement or (iv) the damages, if any, that may be payable if this Agreement is terminated for any reason. Neither Pfizer nor Sangamo makes any representation, warranty or covenant, either express or implied, that (A) it will successfully Develop, Manufacture, Commercialize or continue to Develop, Manufacture or Commercialize any Product in any country, (B) if Commercialized, that any Product will achieve any particular sales level, whether in any individual country or cumulatively throughout the Territory or (C) Pfizer will devote, or cause to be devoted, any level of diligence or resources to Developing or Commercializing any Product in any country, or in the Territory in general, other than is expressly required by the Pfizer Diligence Obligations or the other provisions of this Agreement.

## ARTICLE 6
## INTELLECTUAL PROPERTY RIGHTS

**6.1 Ownership of Intellectual Property**. Except as otherwise set forth in this Agreement, each Party will solely own all right, title and interest in and to:

**(a)** any and all Know-How made solely by or on behalf of such Party or its Representatives in connection with their activities under this Agreement,

**(b)** any and all Patent Rights claiming any such Know-How described in clause (a) of this Section 6.1; and

**(c)** any and all Know-How, Patent Rights or other Intellectual Property Rights that such Party owns as of the Effective Date or otherwise acquires during the Term independent of this Agreement.

For the purposes of determining ownership under this Agreement, as applicable, inventorship will be determined in accordance with United States patent laws.

Notwithstanding the provisions of this Section 6.1, Sangamo will solely own all right, title and interest in and to Zinc Finger Protein Research Technology. Pfizer agrees to assign and hereby assigns, and will cause its Representatives to assign, to Sangamo, all right, title and interest throughout the world in and to any and all Zinc Finger Protein Research Program Technology made by Pfizer or its Representatives, subject to a retained right by Pfizer and its Affiliates to practice such assigned Zinc Finger Protein Research Program Technology (x) for [ * ], and (y) for [ * ]. Further, Pfizer will, and will cause its Representatives to, execute any and all assignments, applications for domestic and foreign patents and other documents and to do such other acts reasonably requested by Sangamo to assign such Zinc Finger Protein Research Program Technology to Sangamo.

To the extent that Pfizer files Patent Rights claiming any Research Program Know-How solely owned by Pfizer that is both [ * ] and [ * ], Pfizer shall and hereby does grant to Sangamo a non-exclusive, royalty-free, perpetual, irrevocable, and worldwide license under such Research Program Patent Right; Sangamo may grant sublicenses under such license to its Affiliates and to Third Parties solely for use in connection with products researched or developed by or on behalf of Sangamo. For avoidance of doubt, the non-exclusive license to Sangamo to such improvement [ * ] (other than the applicable Research Program Patent Right) [ * ].

The Parties will jointly own any Joint Technology. Subject to (xx) the grant of licenses or sublicenses to Pfizer under Section 2.1, (yy) Sangamo's covenants under Section 9.4 and (zz) the Parties' other rights and obligations under this Agreement, each Party will be free to exploit, either itself or through the grant of licenses to Third Parties (which Third Party licenses may be further sublicensed), Joint Patent Rights and Joint Know-How throughout the world without restriction, without the need to obtain further consent from or provide notice to the other Party, and without any duty to account or otherwise make any payment of any compensation to the other Party.

**6.2 Patent Rights**.

**(a) Filing, Prosecution and Maintenance of Patent Rights.**

(i) **Research Program Patent Rights**. The Parties shall reasonably cooperate with each other with respect to the filing of Research Program Patent Rights.

(ii) **Licensed Zinc Finger Protein Research Program Patent Rights**. Subject to Pfizer's rights with respect to Research Program Clinical Candidate Patent Rights pursuant to Section 6.2(a)(iii), Sangamo will have the first right to file, prosecute and maintain the Research Program Patent Rights that are Licensed Patents (the "Licensed Zinc Finger Protein Research Program Patent Rights") in the Territory at Sangamo's sole expense using counsel of its own choice reasonably acceptable to Pfizer. Sangamo will keep Pfizer advised on the status of the preparation, filing, prosecution, and maintenance within the [ * ], and upon Pfizer's written request any other country, of patent applications included within such Licensed Zinc Finger Protein Research Program Patent Rights and the maintenance of any issued patents included within such Licensed Zinc Finger Protein Research Program Patent Rights. Further, Sangamo will consult and reasonably cooperate with Pfizer with respect to the preparation, filing, prosecution and maintenance of such Licensed Zinc Finger Protein Research Program Patent Rights, including: (1) allowing Pfizer a reasonable opportunity and reasonable time to review and comment regarding relevant substantive communications to Sangamo and drafts of any responses or other proposed substantive filings by Sangamo before any applicable filings are submitted to any relevant patent office or Governmental Authority and (2) reflecting any reasonable and timely comments offered by Pfizer in any final filings submitted by Sangamo to any relevant patent office or Governmental Authority. If Sangamo elects to cease the prosecution or maintenance of any Licensed Zinc Finger Protein Research Program Patent Rights, Sangamo will provide Pfizer with written notice not less than [ * ] before any action is required, upon the decision to not continue the prosecution of such patent application or maintenance of such patent. In such event, Sangamo will permit Pfizer to continue prosecution or maintenance of any such Licensed Zinc Finger Protein Research Program Patent Rights in such country at Pfizer's expense. If Pfizer elects to continue such prosecution or maintenance, (i) Pfizer will promptly identify and engage the attorneys and agents who will conduct further activities on Pfizer's behalf and Sangamo will reasonably cooperate to promptly transfer the necessary files and execute the necessary forms regarding such transfer, (ii) except as set forth in (i), Sangamo will have no responsibility with respect to the filing, prosecution or maintenance of, or any expenses incurred in connection with, any such Licensed Zinc Finger Protein Research Program Patent Rights following Sangamo's notice, (iii) Pfizer will keep Sangamo advised on the status of the preparation, filing, prosecution, and maintenance of all such Licensed Zinc Finger Protein Research Program Patent Rights and will reasonably consider any comments made by Sangamo in connection therewith, and (iv) Pfizer will promptly, and no later than [ * ] after written request by Sangamo, by written notice to Sangamo provide a status report of all such Licensed Zinc Finger Protein Research Program Patent Rights.

(iii) **Research Program Clinical Candidate Patent Rights**. Pfizer will have the first right to file, prosecute and maintain Research Program Clinical Candidate Patent Rights in the Territory using counsel of its own choice reasonably acceptable to Sangamo. For clarity, it is agreed that Pfizer may use internal patent counsel and agents, filing clerks, and paralegals employed by Pfizer, for coordinating worldwide filings of such Patent Rights, for prosecution before the European and Japanese Patent Offices, and for directly instructing any US

and ex-US outside counsel and patent agents, including by providing draft applications and responses, and that Pfizer may employ its preferred outside counsel and patent agents to conduct such activities as required for US and ex-US prosecution.

At Pfizer's request and expense (subject to the next sentence), Sangamo will cooperate and assist Pfizer and outside counsel and agents in the preparation and prosecution of such Research Program Clinical Candidate Patent Rights. Sangamo will be responsible for [ * ] for preparation, prosecution and maintenance of Research Program Clinical Candidate Patent Rights in [ * ] and [ * ] for preparation, prosecution and maintenance of Research Program Clinical Candidate Patent Rights in [ * ]. Pfizer will keep Sangamo advised on the status of the preparation, filing, prosecution, and maintenance of all patent applications and issued patents included within the Research Program Clinical Candidate Patent Rights that Pfizer is prosecuting and maintaining. Further, Pfizer will (i) allow Sangamo a reasonable opportunity and reasonable time to review and provide comment to Pfizer's in-house or outside counsel regarding relevant substantive communications to Pfizer and drafts of any responses or other proposed substantive filings by Pfizer before any applicable filings are submitted to any relevant patent office (or Governmental Authority) in [ * ], and upon Sangamo's written request [ * ], and (ii) reflect any reasonable and timely comments offered by Sangamo in any final filings submitted by Pfizer to any relevant patent office (or Governmental Authority) in [ * ] (or [ * ]).

If Pfizer elects to cease the prosecution or maintenance of any patent applications or patents of a particular Research Program Clinical Candidate Patent Rights in any country, Pfizer will provide Sangamo with written notice of its decision not less than [ * ] before any action is required. If Sangamo elects to continue such prosecution or maintenance, (i) Sangamo will promptly identify and engage the attorneys and agents who will conduct further activities on Sangamo's behalf and Pfizer will reasonably cooperate to promptly transfer the necessary files and execute the necessary forms regarding such transfer, (ii) except as set forth in (i), Pfizer will have no responsibility with respect to the filing, prosecution or maintenance of, or any expenses incurred in connection with, any such Research Program Clinical Candidate Patent Rights following Pfizer's notice, (iii) Sangamo will not disclose any Pfizer Confidential Information in connection with such filing, prosecution or maintenance without Pfizer's prior written approval, not to be unreasonably withheld, (iv) Sangamo will keep Pfizer advised on the status of the preparation, filing, prosecution, and maintenance of all such Research Program Clinical Candidate Patent Rights and will reasonably consider any comments made by Pfizer in connection therewith, and (v) Sangamo will promptly, and no later than [ * ] after written request by Pfizer, by written notice to Pfizer provide a status report of all such Research Program Clinical Candidate Patent Rights.

The Parties will reasonably cooperate to avoid including in Research Program Clinical Candidate Patent Rights any inventions also relevant to zinc finger proteins active against targets other than C9ORF72. In the event that the Parties agree such invention that is relevant to other zinc finger proteins should be disclosed in the same initial filing with an invention that is directed to Compounds, and such invention relevant to other zinc finger proteins is, [ * ], significant with respect to Sangamo's business, the Parties shall cooperate in each relevant country to (A) [ * ], which for avoidance of doubt may [ * ], (B) [ * ] which [ * ], or (C) take such other action as the

Parties mutually agree [ * ]. All patent applications and patents which (a) issue directly or indirectly from such patent application and (b) solely contain claims that recite at least one zinc finger protein intended to specifically bind C9ORF72 shall be considered Research Program Clinical Candidate Patent Rights and not Licensed Zinc Finger Protein Research Program Rights. The remaining Patent Rights in the relevant patent family shall in all cases be considered Licensed Zinc Finger Protein Research Program Patent Rights for all purposes in the Agreement, including for avoidance of doubt with respect to all prosecution, enforcement, extension and other related provisions.

(iv) **Sangamo Patent Rights**. Sangamo will have the sole right to file, prosecute and maintain the Sangamo Patent Rights in the Territory at Sangamo's sole expense. Sangamo will keep Pfizer advised on the status of the preparation, filing, prosecution, and maintenance of all patent applications included within such Sangamo Patent Rights and the maintenance of any issued patents included within such Sangamo Patent Rights. Further, with respect to the Patent Rights listed in **Exhibit E** (the "Specified Sangamo Patent Rights"), as updated by mutual agreement of the Parties on a time-to-time basis, Sangamo will consult and reasonably cooperate with Pfizer with respect to the preparation, filing, prosecution and maintenance of such Specified Sangamo Patent Rights, including: (i) allowing Pfizer a reasonable opportunity and reasonable time to review and comment regarding relevant substantive communications to Sangamo and drafts of any responses or other proposed substantive filings by Sangamo before any applicable filings are submitted to any relevant patent office or Governmental Authority, including for avoidance of doubt the addition of any Zinc Finger Research Program Know-How to the specification in any refiling, conversion or new filing of a Specified Sangamo Patent Right ([ * ]), and (ii) reflecting any reasonable comments offered by Pfizer in any final filings submitted by Sangamo to any relevant patent office or Governmental Authority. If Sangamo elects to cease the prosecution or maintenance of any Specified Sangamo Patent Right, Sangamo will provide Pfizer with written notice immediately, but not less than [ * ] before any action is required, upon the decision to not continue the prosecution of such patent application or maintenance of such patent. In such event, Sangamo will permit Pfizer to file or continue prosecution or maintenance of any such Specified Sangamo Patent Right in such country at Pfizer's expense. If Pfizer elects to continue such prosecution or maintenance, (i) Pfizer will promptly identify and engage the attorneys and agents who will conduct further activities on Pfizer's behalf and Sangamo will reasonably cooperate to promptly transfer the necessary files and execute the necessary forms regarding such transfer, (ii) except as set forth in (i), Sangamo will have no responsibility with respect to the filing, prosecution or maintenance of, or any expenses incurred in connection with, any such Specified Sangamo Patent Right following Sangamo's notice, (iii) Pfizer will keep Sangamo advised on the status of the preparation, filing, prosecution, and maintenance of all such Specified Sangamo Patent Right and will reasonably consider any comments made by Sangamo in connection therewith, and (iv) Pfizer will promptly, and no later than [ * ] after written request by Sangamo, by written notice to Sangamo provide a status report of all such Specified Sangamo Patent Rights.

(v) **Pfizer Patent Rights**. Subject to the obligation to coordinate with respect to the filing of Research Program Patent Rights, Pfizer will have the sole right, but no

obligation, to file, prosecute and maintain the Patent Rights that it solely owns under this Agreement, in its sole discretion.

(vi) **Joint Patent Rights**. In the event the Parties make any Joint Know-How that is not Licensed Know-How, the Parties will promptly meet to discuss and determine, based on mutual consent, whether to seek patent protection thereon. Neither Party will file any Joint Patent Right that is not a Licensed Patent without mutual consent. If the Parties decide to seek patent protection for any Joint Know-How that is not Licensed Know-How, they will mutually agree based on each Party's interests who shall have the right to prepare, file, prosecute, maintain and enforce any such Joint Patent Right throughout the world, as to any sharing of costs, recoveries and royalties therefrom, and as to any further licenses required.

(vii) **Patent Term Restoration and Extension**. [ * ] right, but not the obligation, to seek, [ * ] if so required, patent term extensions, and supplemental protection certificates and the like available under Law, including 35 U.S.C. § 156 and applicable foreign counterparts, in any country in the Territory in relation to the Licensed Patents. Sangamo and Pfizer will cooperate in connection with all such activities. [ * ], its agents and attorneys will give due consideration to all suggestions and comments of [ * ] regarding any such activities, but in the event of a disagreement between the Parties, [ * ] will have the final decision-making authority; provided, however, that (1) [ * ] will seek [ * ] to extend any Licensed Patent [ * ], including through the use of supplemental protection certificates and the like, [ * ] and (2) without [ * ]'s prior written consent, [ * ] shall not have the right to seek, with respect to any Product and country, any such extension of a Licensed Patent that [ * ] if (A) [ * ] with respect to such Product and country and (B) [ * ], unless [ * ].

(viii) **Clarifications**. For clarity, (i) prosecution under this Section 6.2 includes opposition, revocation, post-grant review or other patent office proceedings, unless such proceedings are concurrent with Third Party litigation under Section 6.4(a), in which case the provisions of Section 6.4(a) shall govern the Parties' rights and obligations with respect to such proceedings, and (ii) Third Party declaratory judgment actions or other court actions relating to Patent Rights shall be governed by 6.4(a), and by 6.4(b) if applicable.

(ix) **Liability**. To the extent that a Party is obtaining, prosecuting or maintaining a Patent Right or otherwise exercising its rights under this Section 6.2, such Party, and its Affiliates, employees, agents or representatives, will not be liable to the other Party in respect of any act, omission, default or neglect on the part of any such Party, or its Affiliates, employees, agents or representatives, in connection with such activities undertaken in good faith.

(x) **Recordation.** If Pfizer deems it necessary or desirable to register or record this Agreement or evidence of this Agreement with any patent office or other appropriate Governmental Authority(ies) in one or more jurisdictions in the Territory, Sangamo will reasonably cooperate to execute and deliver to Pfizer any documents accurately reflecting or evidencing this Agreement that are necessary or desirable, in Pfizer's reasonable judgment, to complete such registration or recordation.

**6.3 Joint Research Agreement.** This Agreement shall be understood to be a joint research agreement under 35 U.S.C. § 103(c)(3) entered into for the purpose of researching, identifying and Developing Pfizer Licensed Products.

**6.4 Enforcement and Defense of Patent Rights**.

**(a) Enforcement of Sangamo Patent Rights and Licensed Research Program Patent Rights**.

(i) Each Party will promptly notify the other in the event of any actual, potential or suspected infringement of a patent under the Sangamo Patent Rights or the Licensed Research Program Patent Rights by any Third Party.

(ii) As between Pfizer and Sangamo, Pfizer will have the first right, but not the obligation, to institute litigation or take other steps to remedy infringement in connection with the Research Program Clinical Candidate Patent Rights in the Territory with respect to activities competitive or relevant to those of Pfizer under this Agreement (an "RPCCPR Infringement"), and any such litigation or steps will be at Pfizer's expense; provided that any infringement recoveries resulting from such litigation or steps relating to a claim of RPCCPR Infringement, after deducting Pfizer's out of pocket expenses (including counsel fees and expenses) in pursuing such claim, will be [ * ]. Pfizer will not, without the prior written consent of Sangamo, enter into any compromise or settlement relating to such litigation that (i) admits the invalidity or unenforceability of any Sangamo Patent Right or Research Program Patent Right or (ii) requires Pfizer or Sangamo to abandon any Sangamo Patent Right or Research Program Patent Right. Sangamo, upon request of Pfizer, agrees to timely commence or to join in any such litigation, at Pfizer's expense, and in any event to cooperate with Pfizer in such litigation or steps at Pfizer's expense. Sangamo will have the right to consult with Pfizer about such litigation and to participate in and be represented by independent counsel in such litigation at Sangamo's own expense. If Pfizer fails to institute and prosecute an action or proceeding to abate any RPCCPR Infringement within a period of [ * ] after the first notice of such RPCCPR Infringement under Section 6.4(a)(i) (or such shorter period as may be necessary to bring or defend and maintain such action without loss of rights), then upon Pfizer's written consent (not to be unreasonably withheld), Sangamo shall have the second right, but not the obligation, to commence a suit or take other action to enforce the applicable Research Program Clinical Candidate Patent Right against such RPCCPR Infringement at its own cost and expense.

(iii) As between Pfizer and Sangamo, Sangamo will have the first right, but not the obligation, to institute litigation or take other steps to remedy infringement in connection with the Licensed Research Program Patent Rights or Sangamo Patent Rights in the Territory with respect to a Third Party's Manufacture, use, importation, offer for sale or sale, or other exploitation, of any gene therapy product that is directed to C9ORF72 other than an RPCCPR Infringement (an "C9ORF72 Infringement"), and any such litigation or steps will be at Sangamo's expense. Pfizer, upon request of Sangamo, agrees to timely join in any such litigation, at Sangamo's expense, and in any event to cooperate with Sangamo in such litigation or steps at Sangamo's expense. Pfizer will have the right to consult with Sangamo about such

litigation and to be represented by independent counsel in such litigation at Pfizer's own expense. If Sangamo fails to institute and prosecute an action or proceeding to abate any C9ORF72 Infringement within a period of [ * ] after the first notice of such C9ORF72 Infringement under Section 6.4(a)(i) (or such shorter period as may be necessary to bring or defend and maintain such action without loss of rights), then upon Sangamo's written consent (not to be unreasonably withheld), Pfizer shall have the second right, but not the obligation, to commence a suit or take other action to enforce the applicable Licensed Research Program Patent Right or Sangamo Patent Right against such C9ORF72 Infringement at its own cost and expense; provided that any infringement recoveries resulting from such litigation or steps relating to a claim of C9ORF72 Infringement, after deducting Pfizer's out of pocket expenses (including counsel fees and expenses) in pursuing such claim, will be deemed 1) [ * ] in the case of assertion of Licensed Research Program Patent Rights and 2) [ * ] in the case of Sangamo Patent Rights. For avoidance of doubt, Pfizer shall have no second right to remedy infringement of Licensed Research Program Patent Rights or Sangamo Patent Rights in each case other than with respect to a gene therapy product directed to C9ORF72.

**(b) Enforcement of Pfizer Patent Rights.** Pfizer will have the sole right, but no obligation, to take action to obtain a discontinuance of infringement or bring suit against a Third Party infringing or challenging the validity or enforceability of any Pfizer Patent Right.

**(c) Biosimilar Notices**.

(i) **Sangamo Cooperation**. Upon Pfizer's request, Sangamo will use Commercially Reasonable Efforts to assist and cooperate with Pfizer in (A) establishing a strategy for responding to requests for information from Regulatory Authorities and Third Party requestors and (B) preparing submissions responsive to any Biosimilar Notices received by Pfizer; provided that Pfizer will make the final decisions with respect to such strategy and any such responses.

(ii) **Compliance with Biosimilar Notices**. Pfizer will have the sole right in its discretion to comply with the applicable provisions of 42 U.S.C. § 262(l) (or any amendment or successor statute thereto), any similar statutory or regulatory requirement enacted in the future regarding biologic products in the United States, or any similar statutory or regulatory requirement in any non-U.S. country or other regulatory jurisdiction, in each case, with respect to any Biosimilar Notice received by Pfizer from any Third Party regarding any Product that is being Commercialized in the applicable jurisdiction, and the exchange of information between any Third Party and Pfizer pursuant to such requirements; provided that, prior to any submission of information by Pfizer to a Third Party, Sangamo will have the right to review the patent information included in such proposed submission, solely with respect to Sangamo Patent Rights and Research Program Patent Rights, and to make suggestions as to any changes to such patent information that Sangamo reasonably believes to be necessary; provided further that Pfizer will determine the final content of any such submission to the extent it is related to Research Program Clinical Candidate Patent Rights or Patent Rights that are owned by Pfizer. In the case of a Product approved in the United States under the PHS Act (or, in the case of a country in the Territory other than the United States, any similar Law), to the extent

permitted by applicable Law, Pfizer, as the sponsor of the application for the Product, will be the "reference product sponsor" under the PHS Act. Pfizer will give written notice to Sangamo of receipt of a Biosimilar Notice received by Pfizer with respect to a Product, and Pfizer will consult with Sangamo with respect to the selection of any Sangamo Patent Rights or Research Program Patent Rights to be submitted pursuant to 42 U.S.C. § 262(l) (or any similar law in any country of the Territory outside the United States); provided that (1) [ * ] pursuant to 42 U.S.C. § 262(l)(3)(A) and (2) [ * ], (A) agree pursuant to 42 U.S.C. § 262(l)(4) that [ * ] or (B) or [ * ] pursuant to 42 U.S.C. § 262(l)(5). Sangamo agrees to be bound and will cause its Affiliates and all Third Party Licensors to be bound by the confidentiality provisions of 42 U.S.C. § 262(l)(1)(B)(iii). Solely to the extent any Sangamo Patent Rights or Research Program Patent Rights are involved in any such action brought pursuant to 42 U.S.C. § 262(l), the Parties' rights and responsibilities regarding any action will be determined in accordance with Section 6.4(a).

**(d) Other Actions by Third Parties**. Each Party will promptly notify the other Party in the event of any legal or administrative action by any Third Party involving any Sangamo Patent Right or Licensed Research Program Patent Right of which it becomes aware, including any nullity, revocation, interference, reexamination or compulsory license proceeding. Sangamo will have the sole right, but no obligation, to defend against any such action involving any Sangamo Patent Right, in its own name (to the extent permitted by applicable Law), and any such defense will be at Sangamo's expense. Sangamo will have the first right, but no obligation, to defend against any such action involving any Licensed Research Program Patent Right other than a Research Program Clinical Candidate Patent Right, in its own name (to the extent permitted by applicable Law), and any such defense will be at Sangamo's expense. Pfizer, upon Sangamo's request, agrees to join in any such action at Sangamo's expense and in any event to cooperate with Sangamo at Sangamo's expense. If Sangamo fails to defend against any such action involving a Licensed Research Program Patent Right, then Pfizer will have the right to defend such action, in its own name, and any such defense will be at Pfizer's expense. Pfizer will have the first right, but no obligation, to defend against any such action involving any Research Program Clinical Candidate Patent Right, in its own name (to the extent permitted by applicable Law), and any such defense will be at Pfizer's expense. Sangamo, upon Pfizer's request, agrees to join in any such action at Pfizer's expense and in any event to cooperate with Pfizer at Pfizer's expense. If Pfizer fails to defend against any such action involving a Research Program Clinical Candidate Patent Right, then Sangamo will have the right to defend such action, in its own name, and any such defense will be at Sangamo's expense.

**(e) Purple Book Listings**. To the extent of any Sangamo Patent Rights or Licensed Research Program Patent Rights Covering a Product, the Parties shall cooperate with each other to enable Pfizer to make filings with Regulatory Authorities, as required or allowed in connection with (i) in the United States, the FDA's Purple Book and the Biologics Price Competition and Innovation Act and (ii) outside the United States, under the national implementations of Article 10.1(a)(iii) of Directive 2001/EC/83 or other international equivalents thereof. Pfizer shall consider Sangamo's reasonable requests in connection therewith, including meeting any submission deadlines, in each case, to the extent required or permitted by Applicable Law.

**(f) Allegations of Infringement and Right to Seek Third Party Licenses**.

(i) **Notice**. If the Development, Manufacture, Commercialization or use of any Compound or Product (collectively, the "Licensed Activities") by Pfizer or any of its Affiliates or Sublicensees is alleged by a Third Party to infringe, misappropriate or otherwise violate such Third Party's Patent Rights or other Intellectual Property Rights or Sangamo otherwise identifies any Third Party Patent Rights or other Intellectual Property Rights that may be infringed, misappropriated or otherwise violated by such activities, Sangamo will, promptly upon becoming aware of such allegation or identification, notify Pfizer in writing.

(ii) **Pfizer Option to Negotiate**. If Pfizer determines, in its sole discretion, that, in order for Pfizer, its Affiliates or Sublicensees to engage in the Licensed Activities, it is necessary or desirable to obtain a license under one or more Patent Rights or other Intellectual Property Rights Controlled by a Third Party (collectively, "Third Party IP Rights"), then Pfizer will have the right, but not the obligation, to negotiate and enter into a license or other agreement with such Third Party. All amounts payable under any such license or agreement with a Third Party [ * ].

**(g) Third Party Infringement Suits**. Each of the Parties will promptly notify the other in the event that any Third Party files any suit or brings any other action alleging patent infringement by Pfizer or Sangamo or any of their respective Affiliates or Sublicensees with respect to the Development, Manufacture, Commercialization or use of any Compound or Product (any such suit or other action referred to herein as an "Infringement Claim"). In the case of any Infringement Claim for which a Party has an obligation to indemnify the other Party pursuant to Section 10.1 or 10.2, the Parties shall comply with the terms of Sections 10.1, 10.2 and 10.3, as applicable. With respect to any other Infringement Claim (a "Non-Indemnified Infringement Claim") against Pfizer (including its Affiliates or Sublicensees) alone, Pfizer will have the right, but not the obligation, to control the defense of such Non-Indemnified Infringement Claim, including control over any related litigation, settlement, appeal or other disposition arising in connection therewith. Sangamo, upon request of Pfizer, agrees to cooperate with Pfizer at Pfizer's expense. Sangamo will have the right to consult with Pfizer concerning any Non-Indemnified Infringement Claim. In the case of any Non-Indemnified Infringement Claim against Sangamo alone, Sangamo will have the right, but not the obligation, to control the defense of such Infringement Claim, including control over any related litigation, settlement, appeal or other disposition arising in connection therewith. Pfizer will have the right to consult with Sangamo concerning such Infringement Claim and Pfizer, upon request of Sangamo, will reasonably cooperate with Sangamo at Sangamo's expense.

**6.5 Patents Licensed From Third Parties**. Each Party's rights under Sections 6.2 and 6.4 with respect to any Licensed Patent that is licensed by Sangamo from a Third Party shall be subject to the rights retained by such Third Party.



[ * ] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

**ARTICLE 7**
**CONFIDENTIALITY; PUBLICATION**

**7.1 Duty of Confidence**. Subject to the other provisions of this Article 7:

**(a)** during the Term and for [ * ] thereafter, all Confidential Information of a Party (the "Disclosing Party") shall be maintained in confidence and otherwise safeguarded by the other Party (the "Receiving Party") and its Affiliates, in the same manner and with the same protections as the Receiving Party maintains its own confidential information, but in any event no less than reasonable efforts;

**(b)** the Receiving Party may only use any such Confidential Information for the purposes of performing its obligations or exercising its rights under this Agreement;

**(c)** the Receiving Party may only disclose Confidential Information of the other Party to: (i) its Affiliates, licensees and Sublicensees; and (ii) employees, directors, agents, contractors, consultants and advisers of the Receiving Party and its Affiliates and Sublicensees, in each case to the extent reasonably necessary for the purposes of performing its obligations or exercising its rights under this Agreement; provided that such Persons are bound by legally enforceable obligations to maintain the confidentiality of the Confidential Information in a manner consistent with the confidentiality provisions of this Agreement; and

**(d)** the terms and conditions of this Agreement will be considered Confidential Information of both Parties.

**7.2 Exceptions**. The foregoing obligations as to particular Confidential Information of a Disclosing Party shall not apply to the extent that the Receiving Party can demonstrate that such Confidential Information:

**(a)** is known by the Receiving Party at the time of its receipt without an obligation of confidentiality, and not through a prior disclosure by the Disclosing Party, as documented by the Receiving Party's business records;

**(b)** is in the public domain before its receipt from the Disclosing Party, or thereafter enters the public domain through no fault of the Receiving Party;

**(c)** is subsequently disclosed to the Receiving Party by a Third Party who may lawfully do so and is not under an obligation of confidentiality to the Disclosing Party; or

**(d)** is discovered or developed by the Receiving Party independently and without use of or reference to any Confidential Information received from the Disclosing Party, as documented by the Receiving Party's business records.

Any combination of features or disclosures shall not be deemed to fall within the foregoing exclusions merely because individual features are published or available to the general public or in the rightful possession of the Receiving Party unless the combination itself and principle of



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operation are published or available to the general public or in the rightful possession of the Receiving Party.

**7.3 Authorized Disclosures**. Notwithstanding the obligations set forth in Sections 7.1 and 7.6, a Party may disclose the other Party's Confidential Information (including this Agreement and the terms herein) to the extent:

**(a)** such disclosure is reasonably necessary: (i) to such Party's directors, attorneys, independent accountants or financial advisors for the sole purpose of enabling such directors, attorneys, independent accountants or financial advisors to provide advice to such Party, provided that in each such case such recipients are bound by confidentiality and non-use obligations that are at least as restrictive as those contained in this Agreement; and provided further that the term of confidentiality for recipients may be shorter as long as it is no less than five (5) years; or (ii) to actual or potential investors, acquirors, licensees and other financial or commercial partners solely for the purpose of evaluating or carrying out an actual or potential investment, acquisition or collaboration, provided that in each such case such recipients are bound by confidentiality and non-use obligations at least as restrictive as those contained in the Agreement; and provided further that the term of confidentiality for recipients may be shorter as long as it is no less than [ * ];

**(b)** such disclosure is to a Governmental Authority and necessary or desirable (i) to obtain or maintain INDs, Marketing Approvals or Pricing Approval for any Product within the Territory, or (ii) in order to respond to inquiries, requests or investigations by such Governmental Authority relating to Products or this Agreement;

**(c)** such disclosure is required by Law, judicial or administrative process, provided that except for disclosures governed by the last two sentences of Section 7.4, in such event such Party shall promptly inform the other Party of such required disclosure and provide the other Party an opportunity to challenge or limit the disclosure obligations, provided that Confidential Information that is disclosed pursuant to Section 7.3(b) or this Section 7.3(c) shall remain otherwise subject to the confidentiality and non-use provisions of this Article 7 (provided that such disclosure is not a public disclosure), and the Party disclosing Confidential Information to a Governmental Authority or pursuant to Law or court order shall cooperate with and reasonably assist the other Party (at the other Party's cost) if the other Party seeks a protective order or other remedy in respect of any such disclosure and furnish only that portion of the Confidential Information which, in the opinion of Party's legal counsel, is responsive to such requirement or request;

**(d)** necessary in order to enforce its rights under the Agreement; or

**(e)** such disclosure is by Sangamo and is required pursuant to the terms of any Sangamo Third Party Agreement.

**7.4 SEC Filings and Other Disclosures.** Either Party may disclose the terms of this Agreement and make any other public written disclosure regarding the existence of, or



[ * ] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

performance under, this Agreement, to the extent required, in the reasonable opinion of such Party's legal counsel, to comply with (a) applicable Law, including the rules and regulations promulgated by the United States Securities and Exchange Commission or (b) any equivalent Governmental Authority, securities exchange or securities regulator in any country in the Territory. Before disclosing this Agreement or any of the terms hereof pursuant to this Section 7.4, the Parties will consult with one another on the terms of this Agreement to be redacted in making any such disclosure, with the disclosing Party providing as much advance notice as is feasible under the circumstances, and giving consideration to the timely comments of the other Party. Further, if a Party discloses this Agreement or any of the terms hereof in accordance with this Section 7.4, such Party will, at its own expense, seek such confidential treatment of confidential portions of this Agreement and such other terms as it reasonably determines, giving consideration to the comments of the other Party pursuant to the preceding sentence.

**7.5 Technical Publication**. Neither Party may publish peer reviewed manuscripts, or give other forms of public disclosure such as abstracts and presentations, of results of studies carried out under this Agreement, without the opportunity for prior review by the other Party, except to the extent required by applicable Laws. A Party seeking publication shall provide the other Party the opportunity to review and comment on any proposed publication which relates to the Product at least [ * ] prior to its intended submission for publication. The other Party shall provide the Party seeking publication with its comments in writing, if any, within [ * ] after receipt of such proposed publication. The Party seeking publication shall consider in good faith any comments thereto provided by the other Party and shall comply with the other Party's request to remove any and all of such other Party's Confidential Information from the proposed publication. In addition, the Party seeking publication shall delay the submission for a period up to [ * ] in the event that the other Party can demonstrate reasonable need for such delay, including without limitation, the preparation and filing of a patent application. If the other Party fails to provide its comments to the Party seeking publication within such fourteen [ * ] period, such other Party shall be deemed to not have any comments, and the Party seeking publication shall be free to publish in accordance with this Section 7.5 after the [ * ] period has elapsed. The Party seeking publication shall provide the other Party a copy of the manuscript at the time of the submission. Each Party agrees to acknowledge the contributions of the other Party and its employees in all publications as scientifically appropriate. Notwithstanding anything in this Agreement to the contrary, nothing will prevent Pfizer from making any scientific publication or public announcement with respect to any approved Product(s) under this Agreement; *provided*, *however*, that Pfizer will comply with this Section 7.5 and, except as permitted under Sections 7.2 and 7.3, Pfizer will not disclose any of Sangamo's Confidential Information in any such publication or announcement without obtaining Sangamo's prior written consent to do so (such consent not to be unreasonably withheld).

**7.6 Publicity**.

**(a)** Sangamo and Pfizer shall issue a joint press release announcing this Agreement, which joint press release shall be substantially in the form attached hereto as **Exhibit D** and finalized and issued by the Parties promptly after the Effective Date.

**(b)** Other than the joint press release pursuant to Section 7.6(a) and disclosures under Section 7.4, the Parties agree that any other news release or other public announcement relating to this Agreement or the performance hereunder that would disclose information other than that already in the public domain shall first be reviewed and approved by both Parties (with such approval not to be unreasonably withheld or delayed); provided, however, that notwithstanding the foregoing, Sangamo shall have the right to disclose publicly (including in its securities filings and earning calls) [ * ]; provided further that Pfizer will have at least [ * ] to review and provide edits and comments to any public disclosure proposed by Sangamo under this sentence and Sangamo will reasonably incorporate any edits and address any comments provided by Pfizer in such proposed public disclosure.

**(c)** The Parties agree that after a press release (including the initial press release) or other public announcement has been reviewed and approved by the other Party under this Section 7.6, the disclosing Party may reissue the public disclosures without having to obtain the other Party's prior consent and approval.

**(d)** Each Party agrees that the other Party shall have the right to use such first Party's name in presentations, the company's website, collateral materials and corporate overviews to describe the collaboration relationship, as well as in taglines of press releases issued pursuant to this Section 7.6.

**(e)** Subject to Section 7.6(d), neither Party shall use the name, trade name, service marks, trademarks, trade, dress or logos of the other Party (or any of its Affiliates) in publicity releases, advertising or any other publication, without the other Party's prior written consent in each instance.

**7.7 Obligations in Connection with Change of Control**. If Sangamo is subject to a Change of Control, Sangamo will, and it will cause its Representatives to, ensure that no Confidential Information of Pfizer is released to (a) any Affiliate of Sangamo that becomes an Affiliate as a result of the Change of Control or (b) any other Representatives of Sangamo (or of the relevant surviving entity of such Change of Control) who become Representatives of Sangamo as a result of the Change of Control, unless such Affiliate or other Representatives, as applicable, have signed individual confidentiality agreements which include equivalent obligations to those set out in this Article 7. If any Change of Control of Sangamo occurs, Sangamo will promptly notify Pfizer, share with Pfizer the policies and procedures it plans to implement in order to protect the confidentiality of Pfizer's Confidential Information prior to such implementation and make any adjustments to such policies and procedures that are reasonably requested by Pfizer.

## ARTICLE 8
## TERM AND TERMINATION

**8.1 Term**. The term of this Agreement shall commence upon the Effective Date and continue in full force and effect, on a Product-by-Product and country-by-country basis, until the expiration of the Royalty Term for such Product in such country, unless earlier terminated as set

forth in Section 8.2 below (the "Term"). Notwithstanding any provision of this Agreement to the contrary, upon expiration of this Agreement, Pfizer will retain the fully paid-up, perpetual, irrevocable royalty-free license to each Product as set forth in Section 5.3(c), except with respect to those Products and countries for which the Agreement was previously terminated.

**8.2 Termination.**

**(a) Termination by Pfizer for Convenience**. Pfizer may terminate this Agreement on a Product-by-Product or country-by-country basis, or in its entirety, without cause, for any or no reason, by providing written notice of termination to Sangamo, which notice includes an effective date of termination at least [ * ] prior written notice to Sangamo during the Research Term, [ * ] prior written notice to Sangamo after the Research Term but prior to Commercialization of a Product, and [ * ] prior written notice to Sangamo after the commencement of the Commercialization of a Product.

**(b) Termination for Material Breach**. If either Party believes that the other is in breach of its material obligations hereunder, then the non-breaching Party may deliver notice of such breach ("Breach Notice") to the other Party. If the Party receiving notice of breach fails to cure such material breach within the applicable period set forth below, then the Party originally delivering the notice of breach may terminate this Agreement effective on written notice of termination to the other Party. For all breaches other than a failure to make a payment as set forth in this Agreement, the allegedly breaching Party shall have [ * ] from such Breach Notice to cure such breach, provided, however, that if any breach is not reasonably curable within [ * ] and the allegedly breaching Party is making a bona fide effort to cure such breach, such termination will be delayed for a time period to be agreed by both Parties in order to permit the allegedly breaching Party a reasonable period of time to cure such breach, not to exceed an additional [ * ]. For any breach arising from a failure to make a payment set forth in this Agreement, the cure period will be [ * ] and such cure period will be tolled pending resolution of any bona fide dispute between the Parties as to whether such payment is due. In the event Sangamo believes Pfizer has failed to make a payment, Sangamo will provide Pfizer with written notice and both Parties will use reasonable efforts to convene their finance personnel to resolve such dispute within [ * ] of receipt of the written notice. If the Parties agree to a resolution for such bona fide dispute or such dispute is resolved pursuant to Section 12.6, any amounts due as part of such resolution shall be paid within [ * ] thereafter.

**(c) Termination for a Bankruptcy Event**.

(i) **Termination Right.** Each Party shall have the right to terminate this Agreement in the event of a Bankruptcy Event with respect to the other Party.

(ii) **Rights to Intellectual Property.** All rights and licenses granted under or pursuant to this Agreement by a Party are, and shall otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code, licenses of rights to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code. The Parties agree that each Party, as licensee of intellectual property under this Agreement, shall retain and may fully

exercise all of its rights and elections under the U.S. Bankruptcy Code. The Parties further agree that in the event of a rejection of this Agreement by a Party in any bankruptcy proceeding by or against such Party under the U.S. Bankruptcy Code, (a) the other Party shall be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property that are necessary for the other Party to practice its license to such intellectual property, which, if not already in such other Party's possession, shall be promptly delivered to it upon its written request therefor, and (b) such Party shall not interfere with the other Party's rights to such intellectual property, and shall assist and not interfere with such other Party in obtaining such intellectual property and such embodiments of such intellectual property from another entity. The term "embodiments" of intellectual property means all tangible embodiments of the intellectual property licensed hereunder to the extent of the license scope, and shall exclude, without limitation, all inventory of Products and filings with Regulatory Authorities.

(iii) **No Limitation of Rights**. All rights, powers and remedies provided in this Section 8.2(c) are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at Law or in equity (including the Bankruptcy Code) in the event of the commencement of a case under the Bankruptcy Code.

**8.3 Effects of Termination**.

**(a) Termination by Sangamo for Cause or Bankruptcy; Termination by Pfizer for Convenience**. In the event that Sangamo terminates this Agreement, pursuant to Section 8.2(b) or 8.2(c) or Pfizer terminates this Agreement, pursuant to Section 8.2(a), the following will apply:

(i) Except as otherwise expressly provided herein, all rights and obligations of each Party hereunder will cease (including all rights and licenses and sublicenses granted by either Party to the other Party hereunder), except as otherwise expressly provided herein; provided that if such termination is on a Product-by-Product or country-by-country basis then such rights and obligations shall cease with respect to the terminated Product(s) and country(ies) only.

(ii) On Sangamo's written notice to Pfizer, which notice may only be delivered within [ * ] following the effective date of termination, the Parties will negotiate in good faith for a period not to exceed [ * ] regarding:

(A) an agreement under which Pfizer would grant to Sangamo a royalty-bearing, non-exclusive license under the Reversion Technology permitting Sangamo to continue to Develop, Commercialize and Manufacture [ * ] (a "Continuation Product"), provided, however, that any such Agreement will include [ * ] with respect to [ * ];

(B) the related transfer to Sangamo of development data and regulatory filings specifically relating to such Continuation Product or the granting to Sangamo of rights of reference with respect to such data and filings; and

(C) the provision by Pfizer to Sangamo of transitional supplies of such Continuation Product at a commercially reasonable supply price for a commercially reasonable period of time.

(iii) Neither Party will be obligated to enter into any transaction described in Section 8.3(a)(ii).

**(b) Termination by Pfizer for Bankruptcy**. In the event that Pfizer terminates this Agreement pursuant to Section 8.2(c), all rights and obligations of each Party hereunder shall cease (including all non-perpetual, revocable rights and licenses granted by either Party to the other Party hereunder), except as otherwise expressly provided herein.

**(c) Termination by Pfizer for Cause**. In the event that Pfizer terminates this Agreement pursuant to Section 8.2(b), all rights and obligations of each Party hereunder shall cease (including all non-perpetual, revocable rights and licenses granted by either Party to the other Party hereunder), except as otherwise expressly provided herein.

**(d) Pfizer Remedies for Sangamo Material Breach.** In the event that Pfizer has the right, but elects (after notice to Sangamo and failure of Sangamo to cure within the applicable cure period) not, to terminate this Agreement pursuant to Section 8.2(b), Pfizer shall notify Sangamo promptly upon the end of such cure period and: (i) [ * ] and, [ * ] (1) [ * ]; or (2) [ * ] the uncured material breach [ * ]. [ * ].

**(e) Termination by the Parties Because No Compound or Lead Development Compound Identified**. In the event that the Parties terminate this Agreement as contemplated in Section 1.42 or Section 5.1, all rights and obligations of each Party hereunder shall cease (including all non-perpetual, revocable rights and licenses granted by either Party to the other Party hereunder), except as otherwise expressly provided herein.

**8.4 Sangamo's Right to Receive All Payments Accrued**. Expiration or termination of this Agreement for any reason (x) shall be without prejudice to Sangamo's right to receive all Milestone Payments accrued under Section 5.2(a) and Section 5.2(b) and all royalties accrued under Section 5.3(a) prior to the effective date of such termination and to any other remedies that either Party may otherwise have and (y) shall not release a Party hereto from any indebtedness, liability or other obligation incurred hereunder by such Party prior to the date of termination or expiration, provided that Pfizer will not be liable for any Milestone Payment that accrues between a notice of termination by Pfizer of the Agreement in its entirety and the date of termination of this Agreement.

**8.5 Survival**. Expiration or termination of this Agreement shall not relieve the Parties of any obligation accruing prior to such expiration or termination. Without limiting the foregoing, the provisions of Sections [ * ] shall survive the expiration or termination of this Agreement.

**8.6 Termination Not Sole Remedy**. Termination is not the sole remedy under this Agreement and, whether or not termination is effected and notwithstanding anything contained in this Agreement to the contrary, all other remedies shall remain available except as agreed to otherwise herein.

## ARTICLE 9
## REPRESENTATIONS AND WARRANTIES

**9.1 Mutual Representations and Warranties**. Each Party represents and warrants to the other Party as of the Effective Date that:

**(a)** such Party is duly organized, validly existing and in good standing under the laws of the jurisdiction in which it is organized;

**(b)** such Party: (i) has the requisite power and authority and the legal right to enter into this Agreement and to perform its obligations hereunder, and (ii) has taken all requisite action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

**(c)** this Agreement has been duly executed on behalf of such Party and is a legal, valid and binding obligation on such Party, enforceable against such Party in accordance with its terms;

**(d)** all necessary consents, approvals and authorizations of all Governmental Authorities and other persons or entities required to be obtained by such Party in connection with the execution and delivery of this Agreement have been obtained; and

**(e)** the execution and delivery of this Agreement and the performance of such Party's obligations hereunder: (i) do not conflict with or violate any requirement of applicable Laws, regulations or orders of Governmental Authorities, (ii) do not conflict with, or constitute a breach or default under, any contractual obligation of such Party, and (iii) do not conflict with or result in a breach of any provision of the organizational documents of such Party.

**9.2 Representations and Warranties by Sangamo**. Sangamo represents and warrants to Pfizer that:

**(a)** as of the Effective Date, except with respect to Licensed Patents Controlled by Sangamo pursuant to a Current License, Sangamo or its Affiliate is the sole and exclusive owner of the Licensed Patents listed on **Exhibit A**, all of which are free and clear of any claims, liens, charges or encumbrances;

**(b)** as of the Effective Date, Sangamo has the full right, power and authority to (i) grant the licenses and other rights (including the right to sublicense) granted to Pfizer under this Agreement and (ii) perform its obligations under this Agreement;

**(c)** **Exhibit C** sets forth a true and complete list of all Compounds discovered or developed by Sangamo or its Affiliates on or prior to the Effective Date;

**(d)** (A) **Exhibit A** sets forth a true and complete list of all Licensed Patents (i) owned or otherwise Controlled by Sangamo or its Affiliates as of the Effective Date or (ii) to which Sangamo or its Affiliates have as of the Effective Date been granted or otherwise transferred any right to practice under, in each case that are necessary for the Development, Manufacture, or Commercialization of Compounds, (B) except for expired provisional patent applications, each such Patent Right, remains in full force and effect as of the Effective Date and (C) Sangamo or its Affiliates have timely paid, or caused the appropriate Third Parties to pay, all filing and renewal fees payable as of the Effective Date with respect to such Patent Rights;

**(e)** to Sangamo's knowledge as of the Effective Date, no Third Party (i) is infringing any Licensed Patents in the Field or (ii) has challenged or threatened to challenge the inventorship, ownership, Sangamo's right to use, scope, validity or enforceability of, or Sangamo's or any Current Licensor's rights in or to, any Licensed Patents (including, by way of example, through the institution or written threat of institution of interference, derivation, post-grant review, opposition, nullity or similar invalidity proceedings before the United States Patent and Trademark Office or any analogous foreign Governmental Authority);

**(f)** as of the Effective Date, Sangamo has complied with all applicable Laws, including any disclosure requirements, in connection with the filing, prosecution and maintenance of the Licensed Patents;

**(g)** except with respect to Licensed Patents Controlled by Sangamo pursuant to a Current License, Sangamo has obtained from all inventors of the Licensed Patents existing as of the Effective Date, valid and enforceable agreements assigning to Sangamo each such inventor's entire right, title and interest in and to all such Licensed Patents;

**(h)** except with respect to Licensed Technology Controlled by Sangamo pursuant to a Current License, no Licensed Technology existing as of the Effective Date is subject to any funding agreement with any government or Governmental Authority;

**(i)** except as expressly disclosed in **Exhibit E**, as of the Effective Date, neither Sangamo nor any of its Affiliates are party to or otherwise subject to any agreement or arrangement which limits the licensed or sublicensed rights of Pfizer with respect to, or limits the ability of Pfizer to grant a sublicense to, or provide access or other rights in, to, or under any Licensed Technology (including any Patent Right or Know-How included therein), in each case, that would, but for such agreement or arrangement, be included in the rights licensed to Pfizer pursuant to this Agreement;

**(j)** as of the Effective Date, (i) there are no Sangamo Third Party Agreements other than the Current Licenses set forth on **Exhibit F**, (ii) true and complete copies of each Current License (other than financial terms redacted therefrom) have been provided to Pfizer, (iii) except as provided in the Current Licenses, no Third Party has any right, title or interest in or

to, or any license under, any Licensed Technology that conflicts with the rights granted to Pfizer hereunder, (iv) no rights granted by or to Sangamo or its Affiliates under any Current License conflict with any right or license granted to Pfizer hereunder and (iv) Sangamo and its Affiliates are in compliance in all material respects with all Current Licenses;

**(k)** as of the Effective Date, except as expressly disclosed in **Exhibit E**, there is no (i) claim, demand, suit, proceeding, arbitration, inquiry, investigation or other legal action of any nature, civil, criminal, regulatory or otherwise, pending or, to the knowledge of Sangamo, threatened against Sangamo or any of its Affiliates or (ii) judgment or settlement against or owed by Sangamo or any of its Affiliates, in each case in connection with the Licensed Technology or relating to the transactions contemplated by this Agreement;

**(l)** as of the Effective Date, Sangamo has valid and enforceable agreements with all persons employed by Sangamo or its Affiliates who will conduct activities under this Agreement which require such persons to assign to Sangamo their entire right, title and interest in and to all Licensed Technology; and

**(m)** as of the Effective Date, Sangamo has no knowledge of (i) any prior art or other facts that Sangamo reasonably believes would result in the invalidity or unenforceability of any issued or pending claims included in the Licensed Patents, (ii) any inequitable conduct or fraud on any patent office with respect to any of the Licensed Patents or (iii) any Person (other than Persons identified in the applicable patent applications or patents, as inventors of inventions claimed in the Licensed Patents) who claims to be an inventor of an invention claimed in the Licensed Patents.

**9.3 Accuracy of Representations and Warranties**.

**(a)** Sangamo will promptly notify Pfizer of any lawsuits, claims, administrative actions or other proceedings asserted or commenced against Sangamo or its Representatives involving in any material way the ability of Sangamo to deliver the rights, licenses and sublicenses granted to Pfizer herein.

**(b)** Sangamo will promptly notify Pfizer in writing of any facts or circumstances arising after the Effective Date which come to Sangamo's attention at any time during the Term and which would cause, or through the passage of time would cause, any of the representations and warranties contained in Section 9.1 or Section 9.2, if made at the time of such fact or circumstance becomes known to Sangamo, to be inaccurate or untrue in any material respect.

**9.4 Sangamo Covenants**. In addition to the covenants made by Sangamo elsewhere in this Agreement, Sangamo hereby covenants to Pfizer that, from the Effective Date until expiration or termination of this Agreement:

**(a)** Sangamo will not, and will cause its Affiliates not to (i) license, sell, or assign (other than in a connection with a permitted assignment of this Agreement by Sangamo

pursuant to Section 12.2) or otherwise transfer to any Person (other than Pfizer or its Affiliates or Sublicensees pursuant to the terms of this Agreement) any Licensed Technology (or agree to do any of the foregoing) in a manner that is inconsistent with the licenses and other rights granted to Pfizer under this Agreement or (ii) incur or permit to exist, with respect to any Licensed Technology, any lien, encumbrance, charge, security interest, mortgage, liability, assignment, grant of license or other Binding Obligation in each case that is inconsistent with the licenses and other rights granted to Pfizer under this Agreement;

**(b)** Sangamo will not (i) take any action with respect to any Sangamo Third Party Agreement that diminishes the rights under the Licensed Technology granted to Pfizer under this Agreement or (ii) fail to take any action with respect to a Sangamo Third Party Agreement that is reasonably necessary to avoid diminishing the rights under the Licensed Technology granted to Pfizer under this Agreement;

**(c)** Sangamo will (i) not enter into any Sangamo Third Party Agreement that adversely affects (1) the rights granted to Pfizer, Pfizer's Affiliates or Sublicensees hereunder or (2) Sangamo's ability to fully perform its obligations hereunder; and (ii) promptly furnish Pfizer with true and complete copies of all (1) amendments to the Current Licenses and (2) Sangamo Third Party Agreements executed following the Effective Date, in each case redacted of financial terms, except in the case of Non-Exclusive Upstream Licenses;.

**(d)** Sangamo has made or will make any payments owing by Sangamo to any inventor of any Licensed Technology owned by Sangamo that is required in connection with the creation or exploitation of or transfer of rights to such Licensed Technology; and

**(e)** during the Term, Sangamo will promptly notify Pfizer in the event that it learns of:

(i) any prior art or other facts that Sangamo believes would result in the invalidity or unenforceability of any of the claims included in any of the Licensed Patents;

(ii) any inequitable conduct or fraud on the patent office with respect to any of the Licensed Patents; or

(iii) any Person (other than Persons identified as inventors of inventions claimed in the Sangamo Patent Rights) who claims to be an inventor of an invention claimed in Licensed Patents.

**9.5 Mutual Covenants.**

**(a) No Debarment**. In the course of the research, development, Manufacture and commercialization of the Products, neither Party nor its Affiliates or Sublicensees shall use any employee or consultant who has been debarred by any Regulatory Authority, or, to such Party's or its Affiliates' knowledge, is the subject of debarment proceedings by a Regulatory Authority. Each Party shall notify the other Party promptly upon becoming aware that any of its

or its Affiliates' or Sublicensees' employees or consultants has been debarred or is the subject of debarment proceedings by any Regulatory Authority.

**(b) Compliance**. Each Party and its Affiliates shall comply in all material respects with all applicable Laws (including all anti-bribery laws) in the Development, Manufacture and Commercialization of the Products and performance of its obligations under this Agreement.

**9.6 Compliance with Law and Ethical Business Practices.** In addition to the other representations, warranties and covenants made by each Party elsewhere in this Agreement, each Party (the "Compliant Party") represents and warrants or covenants, as applicable, to the other Party that during the Term:

**(a)** it is licensed, registered, or qualified under applicable Law to do business, and has obtained such licenses, consents, authorizations or completed such registrations or made such notifications as may be necessary or required by applicable Law to provide the goods or services encompassed within this Agreement, and providing such goods or services is not inconsistent with any other obligation of the Compliant Party;

**(b)** in conducting its activities hereunder, it will and will cause its Affiliates and its other Representatives to comply in all material respects with applicable Law and accepted pharmaceutical industry business practices, including, to the extent applicable to each Compliant Party and each such Affiliate and other Representative, the United States Federal Food, Drug, and Cosmetic Act (21 U.S.C. § 301, et seq.), the Anti-Kickback Statute (42 U.S.C. § 1320a-7b), Civil Monetary Penalty Statute (42 U.S.C. § 1320a-7a), the False Claims Act (31 U.S.C. § 3729 et seq.), comparable state statutes, the regulations promulgated under all such statutes, and the regulations issued by the FDA, consistent with the 'Compliance Program Guidance for Pharmaceutical Manufacturers' published by the Office of Inspector General, U.S. Department of Health and Human Services;

**(c)** with respect to any Products, payments or services provided under this Agreement, it has not taken and will not during the Term take any action directly or indirectly to unlawfully offer, promise or pay, or authorize the offer or payment of, any money or anything of value in order to improperly or corruptly seek to influence any Government Official or any other person in order to gain an improper advantage, and has not accepted, and will not accept in the future any such unlawful payment;

**(d)** it complies with the applicable laws and regulations of the countries where it operates, including anti-bribery and anti-corruption laws, accounting and record keeping laws, and laws relating to interactions with healthcare professionals or healthcare providers (collectively, "HCPs") and Government Officials;

**(e)** commencing promptly after the Effective Date, it will take steps toward adopting and implementing policies and procedures, and will adopt and implement such policies and procedures within six (6) months after the Effective Date, setting out rules governing

interactions with HCPs and Government Officials, engagement of Third Parties, including, where appropriate, due diligence ("Policies"), and its Policies will mandate a robust set of internal controls, including accounting controls, designed to ensure the making and keeping of fair and accurate books, records and accounts, on its operations around the world and apply worldwide to all its employees, subsidiaries, and Third Parties acting on its behalf, and which Policies will include (i) providing training to its officers, directors, employees and where appropriate, its other Representatives on such Policies, (ii) regular monitoring and auditing of activities to confirm compliance with such Policies and the adequacy of internal controls, and remediation of identified issues, and (iii) requirements for regular review as part of its internal processes of improvement, and, from time to time, benchmarking against the standards of the industry with the assistance of external counsel;

**(f)** to its knowledge, it and each of its Affiliates has been and will, for the Term, be in compliance with all applicable Global Trade Control Laws (as defined in Section 12.8 below), including those related to, import controls, export controls, or economic sanctions, and it will cause each of its Affiliates to remain in compliance with the same during the Term;

**(g)** to its knowledge, except to the extent permissible under United States law, neither it nor any of its Affiliates has, on its own behalf or in acting on behalf of any other Person, directly or indirectly engaged with, and will not for the Term, without any required government authorization, directly or indirectly engage in any transactions, or otherwise deal with, any country or Person targeted by United States, European Union, United Kingdom or other relevant economic sanctions laws in connection with any activities related to the Party's interaction with the other Party, including those contemplated under this Agreement; and

**(h)** it is, as between the Parties, solely responsible to ensure Compliance by it and its Affiliates.

**9.7 Representation by Legal Counsel**. Each Party hereto represents that it has been represented by legal counsel in connection with this Agreement and acknowledges that it has participated in the drafting hereof. In interpreting and applying the terms and provisions of this Agreement, the Parties agree that no presumption will exist or be implied against the Party which drafted such terms and provisions.

**9.8 No Other Warranties**. EXCEPT AS EXPRESSLY STATED IN THIS ARTICLE 9 AND IN SECTION 12.10, (A) NO REPRESENTATION, CONDITION OR WARRANTY WHATSOEVER IS MADE OR GIVEN BY OR ON BEHALF OF PFIZER OR SANGAMO; AND (B) ALL OTHER CONDITIONS AND WARRANTIES WHETHER ARISING BY OPERATION OF LAW OR OTHERWISE ARE HEREBY EXPRESSLY EXCLUDED, INCLUDING ANY CONDITIONS AND WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. Both Parties understand that the Products are the subject of ongoing research and development and that neither Party can assure the safety, effectiveness, Marketing Approval, Pricing Approval or commercial success of any Product.

**ARTICLE 10**
**INDEMNIFICATION; LIABILITY; INSURANCE**

**10.1 Indemnification by Sangamo**. Sangamo shall indemnify, defend and hold harmless Pfizer and its Affiliates and Sublicensees, and each of their respective directors, officers, employees and agents (collectively "Pfizer Indemnitees"), from and against all losses, liabilities, damages and expenses, including reasonable attorneys' fees and costs (collectively, "Liabilities"), to the extent resulting from any claims, demands, actions or other proceedings by any Third Party arising out of:

**(a)** the material breach of any representation, warranty or covenant by Sangamo under this Agreement; or

**(b)** the recklessness, negligence or intentional misconduct of any Sangamo Indemnitees;

except, in each case, to the extent caused by the negligence or intentional misconduct of any Pfizer Indemnitees or a material breach by Pfizer of any of its representations, warranties or covenants set forth in this Agreement.

**10.2 Indemnification by Pfizer**. Pfizer shall indemnify, defend and hold harmless Sangamo and its Affiliates, Upstream Licensors and each of their respective directors, officers, employees and agents (collectively "Sangamo Indemnitees"), from and against all Liabilities to the extent resulting from any claims, demands, actions or other proceedings by any Third Party arising out of:

**(a)** the material breach of any representation, warranty or covenant by Pfizer under this Agreement;

**(b)** the recklessness, negligence or intentional misconduct of any Pfizer Indemnitees;

**(c)** the research, Development, Manufacture, and Commercialization of the Products and Companion Diagnostic Assays by or on behalf of Pfizer or its Affiliates or Sublicensees;

except, in each case, to the extent caused by the negligence or intentional misconduct of any Sangamo Indemnitees or a material breach by Sangamo of any of its representations, warranties or covenants set forth in this Agreement.

**10.3 Indemnification Procedure**.

**(a) Notice.** If either Party is seeking indemnification under Section 10.1 or 10.2 (the "Indemnified Party"), it shall promptly inform the other Party (the "Indemnifying Party") of the claim giving rise to the obligation to indemnify pursuant to such Section as soon as reasonably practicable after receiving notice of the claim, provided, however, that no delay on

the part of the Indemnified Party in notifying the Indemnifying Party will relieve the Indemnifying Party from any obligation hereunder unless (and then only to the extent that) the Indemnifying Party is prejudiced thereby.

**(b) Control.** The Indemnifying Party shall have the right, exercisable by notice to the Indemnified Party within [ * ] after receipt of notice from the Indemnified Party of the commencement of or assertion of any Third Party Claim, to assume the direction and control of the defense, litigation, settlement, appeal or other disposition of any such claim for which it is obligated to indemnify the Indemnified Party (including the right to settle the claim solely for monetary consideration) with counsel selected by the Indemnifying Party and reasonably acceptable to the Indemnified Party; provided that (a) the Indemnifying Party has sufficient financial resources, to satisfy the amount of any adverse monetary judgment that is sought, (b) the claim seeks solely monetary damages and (c) the Indemnifying Party expressly agrees in writing that as between the Indemnifying Party and the Indemnified Party, the Indemnifying Party will be solely obligated to satisfy and discharge the claim in full (the conditions set forth in clauses (a), (b) and (c) above are collectively referred to as the "Litigation Conditions"). The Indemnifying Party will be entitled, at its sole cost and expense, to assume direction and control of such defense, with counsel selected by the Indemnifying Party and reasonably acceptable to the Indemnified Party. During such time as the Indemnifying Party is controlling the defense of such Third Party Claim, the Indemnified Party shall cooperate with the Indemnifying Party, and will cause its Affiliates and agents to cooperate upon request of the Indemnifying Party, in the defense or prosecution of the claim, including by furnishing such records, information and testimony and attending such conferences, discovery proceedings, hearings, trials or appeals as may reasonably be requested by the Indemnifying Party. In the event that the Indemnifying Party does not satisfy the Litigation Conditions or does not notify the Indemnified Party of the Indemnifying Party's intent to defend any Third Party Claim within [ * ] after notice thereof, the Indemnified Party may (without further notice to the Indemnifying Party) undertake the defense thereof with counsel of its choice and at the Indemnifying Party's expense (including reasonable, out-of-pocket attorneys' fees and costs and expenses of enforcement or defense). The Indemnifying Party or the Indemnified Party, as the case may be, shall have the right to participate (including the right to conduct discovery, interview and examine witnesses and participate in all settlement conferences), but not control, at its own expense and with counsel of its choice, in the defense of any claim that has been assumed by the other Party.

**(c) Settlement.** The Indemnifying Party will not, without the prior written consent of the Indemnified Party, enter into any compromise or settlement that commits the Indemnified Party to take, or to forbear to take, any action. The Indemnified Party will have the sole and exclusive right to settle any claim, on such terms and conditions as it deems reasonably appropriate, to the extent such claim involves equitable or other non-monetary relief, but will not have the right to settle such claim to the extent such claim involves monetary damages without the prior written consent of the Indemnifying Party. Neither the Indemnifying Party nor the Indemnified Party will make any admission of liability in respect of any claim without the prior written consent of the other party, and the Indemnified Party will use reasonable efforts to mitigate Liabilities arising from such claim. If the Parties cannot agree as to the application of Section 10.1 or 10.2 as to any claim, pending resolution of such dispute, the Parties may conduct

separate defenses of such claims, with each Party retaining the right to claim indemnification from the other Party in accordance with Section 10.1 or 10.2 upon resolution of the underlying claim.

**10.4 Mitigation of Loss**. Each Indemnified Party shall take and shall procure that its Affiliates take all such reasonable steps and action as are reasonably necessary or as the Indemnifying Party may reasonably require in order to mitigate any claims (or potential losses or damages) under this Article 10. Nothing in this Agreement shall or shall be deemed to relieve any Party of any common law or other duty to mitigate any losses incurred by it.

**10.5 Limitation of Liability**. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 10.5 IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF ANY PARTY UNDER SECTION 10.1 OR 10.2, OR DAMAGES AVAILABLE FOR A PARTY'S BREACH OF ITS CONFIDENTIALITY OBLIGATIONS IN ARTICLE 7.

**10.6 Insurance**. Each Party shall procure and maintain, during the Term, commercial general liability insurance, including product liability insurance, with minimum "A-" Best rated insurance carriers to cover its indemnification obligations under Section 10.1 or Section 10.2, as applicable, in each case with limits of not less than [ * ] per occurrence and in the aggregate. All deductibles and retentions will be the responsibility of the named insured. Pfizer and its Affiliates will be an additional insured on Sangamo's commercial general liability and products liability policies, and be provided with a waiver of subrogation. To the extent of its culpability, all coverages of Sangamo will be primary and non-contributing with any similar insurance, carried by Pfizer. Each Party shall provide the other Party with evidence of such insurance by furnishing a certificate of insurance upon request and shall provide the other Party with written notice at least [ * ] prior to the cancellation, non-renewal or material changes in such insurance. It is understood that such insurance shall not be construed to create a limit of either Party's liability with respect to its indemnification obligations under this Article 10. Notwithstanding any provision of this Section 10.6 to the contrary, Pfizer may meet its obligations under this Section 10.6 through self-insurance. Neither Party's insurance will be construed to create a limit of liability with respect to its indemnification obligations under this Article 10.

## ARTICLE 11
## ANTITRUST

**11.1 Approvals**. Each of Sangamo and Pfizer will cooperate with the other Party and use Commercially Reasonable Efforts to make all registrations, filings and applications, to give all notices and to obtain as soon as practicable all governmental or other consents, transfers, approvals, orders, qualifications authorizations, permits and waivers, if any, and to do all other things necessary or desirable for the consummation of the transactions as contemplated hereby.



[ * ] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

**ARTICLE 12**
**GENERAL PROVISIONS**

**12.1 Force Majeure**. Neither Party shall be held liable to the other Party nor be deemed to have defaulted under or breached this Agreement for failure or delay in performing any obligation under this Agreement to the extent such failure or delay is caused by or results from causes beyond the reasonable control of the affected Party, potentially including embargoes, war, acts of war (whether war be declared or not), acts of terrorism, insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, fire, floods, earthquakes or other acts of God, or acts, generally applicable action or inaction by any governmental authority (but excluding any government action or inaction that is specific to such Party, its Affiliates or Sublicensees, such as revocation or non-renewal of such Party's license to conduct business), or omissions or delays in acting by the other Party. The affected Party shall notify the other Party in writing of such force majeure circumstances as soon as reasonably practical, and shall promptly undertake and continue diligently all Commercially Reasonable Efforts necessary to cure such force majeure circumstances or to perform its obligations in spite of the ongoing circumstances.

**12.2 Assignment**. This Agreement may not be assigned or otherwise transferred, nor may any right or obligation hereunder be assigned or transferred, by either Party without the prior written consent of the other Party. Notwithstanding the foregoing, subject to the provisions of Section 12.3, as applicable, either Party may, without consent of the other Party, assign this Agreement and its rights and obligations hereunder in whole or in part to an Affiliate of such Party, or in whole to its successor in interest in connection with the sale of all or substantially all of its stock or its assets to which this Agreement relates, or in connection with a merger, acquisition or similar transaction *provided that* such sale is not primarily for the benefit of its creditors. In addition, Pfizer may assign its rights and obligations under this Agreement to a Third Party where Pfizer or its Affiliate is required, or makes a good faith determination based on advice of counsel, to divest a Product in order to comply with Law or the order of any Governmental Authority as a result of a merger or acquisition. Each Party will promptly notify the other Party of any assignment or transfer under the provisions of this Section 12.2. Any attempted assignment not in accordance with the foregoing shall be null and void and of no legal effect. Any permitted assignee shall assume all assigned obligations of its assignor under this Agreement. The terms and conditions of this Agreement shall be binding upon, and shall inure to the benefit of, the Parties and their respected successors and permitted assigns.

**12.3 Notification of a Change of Control of Sangamo**. Sangamo will notify Pfizer in writing promptly (and in any event prior to the public disclosure thereof) following the entering into of a definitive agreement with respect to a Change of Control of Sangamo.

**12.4 Severability**. If any one or more of the provisions contained in this Agreement is held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby, unless the absence of the invalidated provision(s) adversely affects the substantive rights of the Parties. The Parties shall in such an instance use their best efforts to replace the invalid, illegal

or unenforceable provision(s) with valid, legal and enforceable provision(s) which, insofar as practical, implement the purposes of this Agreement.

**12.5 Notices**. All notices which are required or permitted hereunder shall be in writing and sufficient if delivered personally, sent by facsimile (and promptly confirmed by personal delivery, registered or certified mail or overnight courier), sent by nationally-recognized overnight courier or sent by registered or certified mail, postage prepaid, return receipt requested, addressed as follows:

If to Sangamo:

Sangamo Therapeutics, Inc.
501 Canal Blvd.
Richmond, CA 94804
Attn: Chief Executive Officer
Fax: [ * ]

with a copy to:

Cooley LLP
3175 Hanover Street
Palo Alto, CA 94304
Attn: Marya Postner, Ph.D.
Fax: [ * ]

If to Pfizer:

Pfizer Inc.
R&D Business Development
235 East 42nd Street
New York, New York 10017-5755
Attn: R&D BD Contract Notice

with a copy to:

Pfizer Inc.
Notices: Pfizer Legal Division
235 East 42nd Street
New York, New York 10017-5755
Attn: Chief Counsel, R&D
Fax: [ * ]

and an electronic copy to:

[ * ]

or to such other address(es) as the Party to whom notice is to be given may have furnished to the other Party in writing in accordance herewith. Any such notice shall be deemed to have been given: (a) when delivered if personally delivered or sent by facsimile on a Business Day (or if

delivered or sent on a non-Business Day, then on the next Business Day); (b) on the Business Day after dispatch if sent by nationally-recognized overnight courier; or (c) on the [ * ] following the date of mailing, if sent by mail.

**12.6 Dispute Resolution**.

**(a) Informal Dispute Resolution; Arbitration.** The Parties recognize that disputes as to certain matters may from time to time arise that relate to either Party's rights and/or obligations hereunder, including the interpretation, alleged breach, enforcement, termination or validity of this Agreement (a "Dispute"). For clarity, Dispute shall not include matters within the JRC's authority, which shall be resolved in accordance with Section 3.3. It is the objective of the Parties to establish procedures to facilitate the resolution of such Disputes arising under this Agreement in an expedient manner by mutual cooperation. To accomplish this objective, the Parties agree that if a Dispute arises under this Agreement, and the Parties are unable to resolve such Dispute within [ * ] after such Dispute is first identified by either Party in writing to the other, the Parties shall refer such Dispute to the Executive Officers of the Parties for attempted resolution by good faith negotiations within [ * ] after such notice is received. If the Executive Officers are not able to resolve such Dispute within [ * ], then such Dispute (other than Excluded Claim as defined in Section 12.6(f) below) shall be finally resolved by binding arbitration administered by [ * ] pursuant to [ * ], and judgment on the arbitration award may be entered in any court having jurisdiction thereof.

**(b) Number of Arbitrators; Arbitral Seat.** The arbitration shall be conducted by a panel of three arbitrators experienced in the pharmaceutical business: within [ * ] after initiation of arbitration, each Party shall select one person to act as arbitrator; provided that if a Party fails to appoint an arbitrator within [ * ] of the arbitration being initiated, such appointment shall be made by [ * ]. The two arbitrators appointed in accordance with the preceding sentence shall appoint the third arbitrator, who shall be the chairman of the tribunal. If the arbitrators selected pursuant to the first sentence of this Section 12.6(b) are unable or fail to agree upon the third arbitrator within [ * ] of the appointment of the second arbitrator, the third arbitrator shall be appointed by [ * ]. The place of arbitration shall be [ * ]; all proceedings and communications shall be in English.

**(c) Powers of the Arbitrators.** The arbitrators shall have the discretion to hear and determine at any stage of the arbitration any issue asserted by any Party to be dispositive of any claim or counterclaim, in whole or part, in accordance with such procedure as the arbitrators may deem appropriate, and the arbitrators may render an award on such issue. In addition to the authority conferred on the arbitrators by the [ * ] rules, and without prejudice to any provisional measures that may be available from a court of competent jurisdiction, the arbitrators shall have the power to grant any provisional measures that the arbitrators deem appropriate, including but not limited to provisional injunctive relief until the arbitration award is rendered or the controversy is otherwise resolved and any provisional measures ordered by the arbitrators may, to the extent permitted by applicable Law, be deemed to be a final award on the subject matter of the measures and shall be enforceable as such. Either Party also may, without waiving any remedy under this Agreement, seek from any court having jurisdiction any

injunctive or provisional relief necessary to protect the rights or property of that Party pending the arbitration award. The arbitrators are authorized to award to the prevailing Party, if any, as determined by the arbitrators, their costs and expenses. The arbitrators shall have no authority to award punitive or any other type of damages not measured by a Party's compensatory damages. Each Party shall bear its own costs and expenses and attorneys' fees and an equal share of the arbitrators' fees and any administrative fees of arbitration, except as provided above.

**(d) Statute of Limitations.** In no event shall an arbitration be initiated after the date when commencement of a legal or equitable proceeding based on the dispute, controversy or claim would be barred by the applicable New York statute of limitations.

**(e) Confidentiality**. No information concerning an arbitration, beyond the names of the Parties and the relief requested, may be unilaterally disclosed to a Third Party by any Party unless required by Law. Except to the extent necessary to confirm an award or as may be required by law, neither a Party nor an arbitrator may disclose the existence, content, or results of an arbitration without the prior written consent of both Parties. Any documentary or other evidence given by a Party or witness in the arbitration shall be treated as confidential by any Party whose access to such evidence arises exclusively as a result of its participation in the arbitration, and shall not be disclosed to any Third Party (other than a witness or expert), except as may be required by Law.

**(f) Excluded Claims.** As used in this Section, the term "Excluded Claim" shall mean a dispute, controversy or claim that concerns (i) the scope, validity, enforceability, inventorship or infringement of a patent, patent application, trademark or copyright; or (ii) any antitrust, anti-monopoly or competition law or regulation, whether or not statutory.

**12.7 Governing Law**. This Agreement shall be governed by and construed in accordance with the laws of the State of New York without reference to any rules of conflict of laws; provided that the United Nations Convention on Contracts for International Sale of Goods shall not apply.

**12.8 Global Trade Control Laws.** Parties will perform all activities under this Agreement in full compliance with all applicable economic sanctions, import, and export control laws, regulations, and orders (collectively, "Global Trade Control Laws").

**12.9 Export Control.** This Agreement is made subject to any restrictions concerning the export of products or technical information from the United States of America or other countries which may be imposed upon or related to Sangamo or Pfizer from time to time. Neither Party will knowingly transfer to the other Party any goods, software, technology, or services that are (i) controlled at a level other than EAR99, or for reasons other than anti-terrorism, under the U.S. Export Administration Regulations; (ii) controlled under the U.S. International Traffic in Arms Regulations; (iii) specifically identified as an E.U. Dual Use Item; or (iv) on an applicable export control list of a foreign country.

**12.10 Restricted Markets; Restricted Parties.** The Parties agree that the activities under the Agreement will not (i) be in a Restricted Market; (ii) involve individuals ordinarily resident in a Restricted Market; or (iii) include companies, organizations, or Governmental Authorities from or located in a Restricted Market. Each Party represents and warrants that neither such Party, nor any other Person, directly or indirectly, performing activities under this Agreement on such Party's behalf, are on any applicable Restricted Party Lists, and that such individuals are not employed by any Person on any of the applicable Restricted Party Lists. In the event that any of the Persons noted above, or any Third Party directly or indirectly engaged by such a Person, becomes listed on a Restricted Party List during the Term of this Agreement, the Party responsible for such Person will cease the activities that involve such Person and immediately notify the other Party. Each Party shall conduct Restricted Party Screening of the names and addresses of all employees and subcontractors invited to participate in activities under this Agreement by that Party, and shall require its subcontractors to conduct such screening of its employees and subcontractors or represent that no such subcontractor or employee is on an applicable Restricted Party List. Notwithstanding any cure periods set forth herein, both Parties acknowledge that listing of the other Party on a Restricted Party List, shall be grounds for immediate termination of this Agreement, for cause, with no cure period. For purposes of this Agreement, "Restricted Markets" means the Crimea region of Ukraine, Cuba, Iran, North Korea, Sudan, and Syria, and any other country that, during the Term of this Agreement, is or becomes subject to comprehensive trade sanctions by the United States and/or designated as a state sponsor of terrorism pursuant to section 6(j) of the Export Administration Act, section 40 of the Arms Export Control Act, and section 620A of the Foreign Assistance Act; "Restricted Party Lists" include, but are not limited to, the list of sanctioned entities maintained by the United Nations; the Specially Designated Nationals and Blocked Persons List, Foreign Sanctions Evaders List, and the Sectoral Sanctions Identifications List, as administered by the U.S. Department of the Treasury Office of Foreign Assets Control; the U.S. Denied Persons List, the U.S. Entity List, and the U.S. Unverified List, all administered by the U.S. Department of Commerce; the entities subject to restrictive measures and the Consolidated List of Persons, Groups and Entities Subject to E.U. Financial Sanctions, as implemented by the E.U. Common Foreign & Security Policy; the List of Excluded Individuals / Entities, as published by the U.S. Health and Human Services – Office of Inspector General; any lists of prohibited or debarred parties established under the U.S. Federal Food Drug and Cosmetic Act; the list of persons and entities suspended or debarred from contracting with the U.S. government; and similar applicable lists of restricted parties maintained by the Governmental Authorities of the jurisdictions of import and export; and "Restricted Party Screening" includes, but is not limited to, the comparison of any individual or entity directly or indirectly involved in activities under this Agreement, against the applicable Restricted Party Lists.

**12.11 Termination and Blocked Payment**. If this Agreement is terminated for inclusion of a Person on a Restricted Party List, Restricted Market, or Restricted Market national in activities under this Agreement without a license or other authorization required by Global Trade Control Laws or any other violation of Global Trade Control Laws, the terminating Party shall not be responsible for any payments due to the other Party, even if activities have already occurred. Further, the other Party shall be responsible for reimbursing the terminating Party for

any payments due to the terminating Party under this Agreement that are blocked due to inclusion of a Person on a Restricted Party List, Restricted Market, or Restricted Market national in activities under this Agreement without a license or other authorization required by Global Trade Control Laws or any other violation of Global Trade Control Laws.

**12.12 Entire Agreement; Amendments**. This Agreement, together with the Exhibits hereto, contains the entire understanding of the Parties with respect to the subject matter hereof. Any other express or implied agreements and understandings, negotiations, writings and commitments, either oral or written, with respect to the subject matter hereof are superseded by the terms of this Agreement. The Exhibits to this Agreement are incorporated herein by reference and shall be deemed a part of this Agreement. This Agreement may be amended, or any term hereof modified, only by a written instrument duly executed by authorized representative(s) of both Parties hereto. The Parties agree that the Confidentiality Agreement between the Parties dated as of September 20, 2017, as amended, is hereby terminated, but each Party's information that was the subject of confidentiality obligations under such Confidentiality Agreement (including any information that was orally disclosed within the thirty (30) day period prior to the Effective Date and was declared confidential at the time of disclosure by the disclosing Party, even if the disclosing Party did not provide a written confirmation of such disclosure as of the Effective Date) shall be deemed to be Confidential Information of such Party under this Agreement.

**12.13 Headings**. The captions to the several Articles, Sections (and subsections) and Exhibits hereof are not a part of this Agreement, but are merely for convenience to assist in locating and reading the several Articles, Sections and Exhibits hereof.

**12.14 Independent Contractors**. It is expressly agreed that Sangamo and Pfizer shall be independent contractors and that the relationship between the two Parties shall not constitute a partnership, joint venture or agency. Neither Sangamo nor Pfizer shall have the authority to make any statements, representations or commitments of any kind, or to take any action, which shall be binding on the other Party, without the prior written consent of the other Party. Neither Party shall report this Agreement or the relationship between the Parties as a partnership for tax purposes unless required by law.

**12.15 Waiver**. No provision of this Agreement will be waived by any act, omission or knowledge of a Party or its agents or employees except by an instrument in writing expressly waiving such provision and signed by a duly authorized officer of the waiving Party. The waiver by either Party hereto of any right hereunder, or of any failure of the other Party to perform, or of any breach by the other Party, shall not be deemed a waiver of any other right hereunder or of any other breach by or failure of such other Party whether of a similar nature or otherwise.

**12.16 Cumulative Remedies**. No remedy referred to in this Agreement is intended to be exclusive, but each shall be cumulative and in addition to any other remedy referred to in this Agreement or otherwise available under law.

**12.17 Waiver of Rule of Construction**. Each Party has had the opportunity to consult with counsel in connection with the review, drafting and negotiation of this Agreement. Accordingly, the rule of construction that any ambiguity in this Agreement shall be construed against the drafting Party shall not apply.

**12.18 Business Day Requirements**. In the event that any notice or other action or omission is required to be taken by a Party under this Agreement on a day that is not a Business Day then such notice or other action or omission shall be deemed to be required to be taken on the next occurring Business Day.

**12.19 Further Actions**. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as necessary or appropriate in order to carry out the purposes and intent of this Agreement.

**12.20 No Third Party Rights or Obligations**. No provision of this Agreement will be deemed or construed in any way to result in the creation of any rights or obligation in any Person not a Party to this Agreement. However, Pfizer may decide, in its sole discretion, to use one or more of its Affiliates to perform its obligations and duties hereunder, *provided that* Pfizer will remain liable hereunder for the performance by any such Affiliates of any such obligations.

**12.21 Counterparts**. This Agreement may be executed in two or more counterparts by original signature, facsimile or PDF files, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

**<REMAINDER OF PAGE INTENTIONALLY LEFT BLANK>**

IN WITNESS WHEREOF, the Parties intending to be bound have caused this Research Collaboration and License Agreement to be executed by their duly authorized representatives as of the Effective Date.

| **Sangamo Therapeutics, Inc.** | **Pfizer Inc.** |
|---|---|
| By:/s/ Alexander Macrae | By:/s/ Gregory LaRosa |
| Name:Alexander Macrae | Name:Gregory LaRosa |
| Title:CEO | Title:SVP and CSO RDRU |

[ * ] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

**EXHIBIT A:** **LICENSED PATENTS**

**{**Redacted content comprises approximately 11 pages}

**[ * ]**



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**EXHIBIT B:** **RESEARCH PLAN**

**{**Redacted content comprises approximately 9 pages}
**[ * ]**



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**EXHIBIT C:** **COMPOUNDS**

[ * ]



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## Sangamo and Pfizer announce collaboration for development of zinc finger protein gene therapy for ALS

**Richmond, California and New York, New York, January 3, 2018 –** Sangamo Therapeutics, Inc. (Nasdaq: SGMO) and Pfizer Inc. (NYSE: PFE) today announced a collaboration for the development of a potential gene therapy using zinc finger protein transcription factors (ZFP-TFs) to treat amyotrophic lateral sclerosis (ALS) and frontotemporal lobar degeneration (FTLD) linked to mutations of the C9ORF72 gene.

ALS and FTLD are part of a spectrum of neurodegenerative disorders caused by mutations in the C9ORF72 gene that involve hundreds of additional repetitions of a six base pair sequence of DNA. This ultimately leads to the deterioration of motor neurons, in the case of ALS, or neurons in the frontal and temporal lobes, in the case of FTLD. Currently, there are no cures to halt or reverse the progression of ALS or FTLD. The C9ORF72 mutation is linked to approximately one-third of cases of familial ALS.

“We are excited to continue our collaborative relationship with Pfizer with this new program using Sangamo’s zinc finger protein technology to develop a potential gene therapy for patients with certain forms of ALS and FTLD, devastating diseases with very limited treatment options,” said Dr. Sandy Macrae, Chief Executive Officer of Sangamo. “The precision and flexibility of zinc finger proteins enables targeting of virtually any genetic mutation. Collaboration with the right partner for a given therapeutic application is a key component of our corporate strategy and enables us to pursue the vast opportunity set of our platform.”

“We look forward to working with Sangamo on potential treatments for devastating diseases related to genetic mutations of the C9ORF72 gene,” said Greg LaRosa, Senior Vice President and Chief Scientific Officer, Pfizer Rare Disease. “Pfizer is proud of the progress we have made in the area of gene therapy, which offers tremendous promise to patients and their families.”

Gene therapies are a potentially transformational technology for patients, focused on highly specialized, one-time treatments that address the root cause of diseases caused by genetic mutation. Sangamo’s ZFP-TF technology involves introducing an engineered zinc finger protein (ZFP) which is designed to identify and bind to a precise sequence of DNA. Once bound to the target sequence of DNA, a transcriptional repressor domain attached to the ZFP suppresses



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expression of the gene. Under this collaboration, Sangamo and Pfizer will investigate allele-specific ZFP-TFs with the potential to differentiate the mutant C9ORF72 allele from the wild type allele and to specifically down-regulate expression of the mutant form of the gene.

Under the terms of the collaboration agreement, Sangamo will receive a $12 million upfront payment from Pfizer. Sangamo will be responsible for the development of ZFP-TF candidates. Pfizer will be operationally and financially responsible for subsequent research, development, manufacturing and commercialization for the C9ORF72 ZFP-TF program and any resulting products. Sangamo is eligible to receive potential development and commercial milestone payments of up to $150 million, as well as tiered royalties on net sales.

In May 2017, Sangamo and Pfizer entered into an exclusive, global collaboration and license agreement for the development and commercialization of potential gene therapy products for Hemophilia A, including SB-525, which entered the clinic in August 2017.

**About Sangamo's ZFP-TF Gene Regulation Platform**

Sangamo's zinc finger protein transcription factor (ZFP-TF)-mediated gene regulation approach is designed to either selectively repress (down-regulate) or activate (up-regulate) the expression of a specific gene or DNA sequence with a single administration. This technology enables targeting of a broad range of diseases requiring regulation of endogenous gene expression and differs from other approaches such as gene therapy or zinc finger nuclease-mediated genome editing, which are designed to replace or correct a missing or mutated gene or DNA sequence. Sangamo is developing ZFP-TFs as a novel therapeutic approach for diseases of the central nervous system (CNS). In keeping with the company's strategy to externalize development of ZFP-TFs for CNS diseases, Sangamo has established collaborations with Pfizer for ALS and FTLD and with Shire for Huntington's disease. Sangamo is also developing ZFP-TFs to down-regulate the expression of tau, a protein associated with Alzheimer's disease and frontotemporal dementia (FTD). The company's strategy for the tau program is to seek a development and commercialization partner upon completion of preclinical studies.

**About Sangamo Therapeutics**

Sangamo Therapeutics, Inc. is focused on translating ground-breaking science into genomic therapies that transform patients' lives using the company's industry leading platform technologies in genome editing, gene therapy, gene regulation and cell therapy. The Company is conducting Phase 1/2 clinical trials in Hemophilia A and Hemophilia B, and in lysosomal storage disorders MPS I and MPS II. Sangamo has an exclusive, global collaboration and license agreement with Pfizer Inc. for gene therapy programs for Hemophilia A, ALS and FTLD, with Bioverativ Inc. for hemoglobinopathies, including beta thalassemia and sickle cell disease, and with Shire International GmbH to develop therapeutics for Huntington's disease. In addition, Sangamo has established strategic partnerships with companies in non-therapeutic applications of its technology, including Sigma-Aldrich Corporation and Dow AgroSciences. For more information about Sangamo, visit the Company's website at www.sangamo.com.



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**About Pfizer Inc.: Working together for a healthier world®**

At Pfizer, we apply science and our global resources to bring therapies to people that extend and significantly improve their lives. We strive to set the standard for quality, safety and value in the discovery, development and manufacture of health care products. Our global portfolio includes medicines and vaccines as well as many of the world's best-known consumer health care products. Every day, Pfizer colleagues work across developed and emerging markets to advance wellness, prevention, treatments and cures that challenge the most feared diseases of our time. Consistent with our responsibility as one of the world's premier innovative biopharmaceutical companies, we collaborate with health care providers, governments and local communities to support and expand access to reliable, affordable health care around the world. For more than 150 years, we have worked to make a difference for all who rely on us. We routinely post information that may be important to investors on our website at www.pfizer.com. In addition, to learn more, please visit us on www.pfizer.com and follow us on Twitter at @Pfizer and @Pfizer_News, LinkedIn, YouTube and like us on Facebook at Facebook.com/Pfizer.

**Sangamo Forward Looking Statements**

*This press release contains forward-looking statements based on Sangamo's current expectations. These forward-looking statements include, without limitation references relating to research and development of therapeutic applications of Sangamo's gene therapy and ZFP technology platforms, the potential of Sangamo's ZFP technology to treat ALS and FTLD, the potential success and benefits of Sangamo's corporate strategy to partner with other pharmaceutical companies, and anticipated milestones and royalties. Actual results may differ materially from these forward-looking statements due to a number of factors, including uncertainties relating to the ability of Sangamo's ZFP-TF technology to treat successfully diseases like ALS and FTLD, the inability to execute on Sangamo's corporate strategy to partner with other pharmaceutical compnaies or collaborate successfully, the inability to achieve anticipated milestones and the inability to develop commercially viable products. For a more detailed discussion of these and other risks, please see Sangamo's SEC filings, including the risk factors described in its most recent Quarterly Report on Form 10-Q. Sangamo assumes no obligation to update the forward-looking information contained in this press release.*

***Pfizer Disclosure Notice:***

*The information contained in this release is as of January 3, 2018. Pfizer assumes no obligation to update forward-looking statements contained in this release as the result of new information or future events or developments.*

*This release contains forward-looking information about ZFP-TFs, a collaboration for the development of a potential gene therapy using ZFP-TFs for the treatment of ALS and FTLD and the potential of gene therapy, including their potential benefits, that involves substantial risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. Risks and uncertainties include, among other things, the*



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*uncertainties inherent in research and development, including the ability to meet anticipated clinical study commencement and completion dates as well as the possibility of unfavorable study results, including unfavorable new clinical data and additional analyses of existing clinical data; risks associated with initial data; the risk that clinical trial data are subject to differing interpretations, and, even when we view data as sufficient to support the safety and/or effectiveness of a product candidate, regulatory authorities may not share our views and may require additional data or may deny approval altogether; whether regulatory authorities will be satisfied with the design of and results from our clinical studies; whether and when any applications may be filed with regulatory authorities for any potential gene therapies; whether and when regulatory authorities may approve any such applications, which will depend on the assessment by such regulatory authorities of the benefit-risk profile suggested by the totality of the efficacy and safety information submitted, and, if approved, whether any such gene therapies will be commercially successful; decisions by regulatory authorities regarding labeling and other matters that could affect the availability or commercial potential of any such gene therapies; and competitive developments.*

*A further description of risks and uncertainties can be found in Pfizer's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 and in its subsequent reports on Form 10-Q, including in the sections thereof captioned "Risk Factors" and "Forward-Looking Information and Factors That May Affect Future Results", as well as in its subsequent reports on Form 8-K, all of which are filed with the U.S. Securities and Exchange Commission and available at www.sec.gov and www.pfizer.com.*

**Sangamo Contacts**

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*###*



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**EXHIBIT E:** **SPECIFIED SANGAMO PATENT RIGHTS**

**[ * ]**



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**EXHIBIT F:** **CURRENT LICENSES**

[ * ]



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**SCHEDULE 2.1: PFIZER OBLIGATIONS UNDER CURRENT LICENSES**

**{**Redacted content comprises approximately 2½ pages}

**[ * ]**



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**Exhibit 21.1**

**Subsidiaries of the Company**

Gendaq Limited (U.K.)

Ceregene Inc. (Delaware)

**Exhibit 23.1**

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in the following Registration Statements:

1. Registration Statements (Forms S-8 No. 333-189621, 333-206173, and 333-221827) pertaining to the Amended and Restated 2013 Stock Incentive Plan and 2010 Employee Stock Purchase Plan of Sangamo Therapeutics, Inc., and

2. Registration Statement (Form S-3 No. 333-218294) and related prospectus of Sangamo Therapeutics, Inc.;

of our reports dated March 1, 2018, with respect to the consolidated financial statements of Sangamo Therapeutics, Inc. and the effectiveness of internal control over financial reporting of Sangamo Therapeutics, Inc. included in this Annual Report (Form 10-K) of Sangamo Therapeutics, Inc. for the year ended December 31, 2017.

/s/ Ernst & Young LLP

Redwood City, California
March 1, 2018

**Exhibit 31.1**

**CHIEF EXECUTIVE OFFICER CERTIFICATE**

I, Alexander Macrae, certify that:

1. I have reviewed this annual report on Form 10-K of Sangamo Therapeutics, Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a – 15(f) and 15d – 15 (f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2018

/s/ Alexander Macrae
Alexander Macrae
President, Chief Executive Officer and Director
(Principal Executive Officer)

**Exhibit 31.2**

**PRINCIPAL FINANCIAL OFFICER CERTIFICATE**

I, Kathy Y. Yi, certify that:

1. I have reviewed this annual report on Form 10-K of Sangamo Therapeutics, Inc. (the "registrant")

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a – 15(f) and 15d – 15 (f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2018

/s/ Kathy Y. Yi
Kathy Y. Yi
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

**Exhibit 32.1**

**Certification Pursuant to 18 U.S.C. §1350, as Adopted Pursuant to §906 of the Sarbanes-Oxley Act of 2002**

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, Alexander Macrae, Chief Executive Officer of Sangamo Therapeutics, Inc. (the "Company"), and Kathy Y. Yi, Chief Financial Officer of the Company, each hereby certifies in his or her capacity, that, to the best of his or her knowledge:

(1) the Company's Annual Report on Form 10-K for the year ended December 31, 2017 (the "Report"), to which this Certification is attached as Exhibit 32.1, fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Alexander Macrae
President, Chief Executive Officer and Director
(Principal Executive Officer)
March 1, 2018

/s/ Kathy Y. Yi
Kathy Y. Yi
Senior Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)
March 1, 2018

*This certification accompanies the Annual Report on Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Sangamo Therapeutics, Inc. under the Securities Act of 1933, as amended, or the Exchange Act (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing. A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to Sangamo Therapeutics, Inc. and will be retained by Sangamo Therapeutics, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.*