UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2015

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 BIOSCIENCES, INC.

(exact name of registrant as specified in its charter)

Delaware	**68-0359556**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**

501 Canal Blvd
Richmond, California 94804
(Address of principal executive offices)

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

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 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 whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of "large accelerated filer," "accelerated filer" and "smaller reporting 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	☐

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

As of August 4, 2015, 69,861,164 shares of the issuer's common stock, par value $0.01 per share, were outstanding.

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SANGAMO BIOSCIENCES, INC.

PART I. FINANCIAL INFORMATION

PART II. OTHER INFORMATION

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some statements contained in this report are forward-looking with respect to our operations, research, development and commercialization activities, clinical trials, operating results and financial condition. These statements 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. Forward-looking statements include, but are not limited to, statements about:

- our strategy;
- product development and commercialization of our products;
- clinical trials;
- partnering;
- revenues from existing and new collaborations;
- our research and development and other expenses;
- 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 statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Many of these risks are discussed in greater detail under the headings "Risk Factors" and "Management's Discussion and Analysis of Financial Conditions and Results of Operations" in this Form 10-Q. Sangamo undertakes no obligation to publicly release any revisions to forward-looking statements to reflect events or circumstances arising after the date of this report. Readers are cautioned not to place undue reliance on the forward-looking statements, which speak only as of the date of this Quarterly Report on Form 10-Q.

ZFP Therapeutic® is a registered trademark of Sangamo BioSciences, Inc.

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

SANGAMO BIOSCIENCES, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited; in thousands, except share and per share amounts)

	June 30, 2015	December 31, 2014
ASSETS		
Current assets:		
Cash and cash equivalents	$ 10,768	$ 6,030
Marketable securities	203,462	172,932
Interest receivable	393	423
Accounts receivable	5,179	10,368
Prepaid expenses	1,089	623
Restricted cash	-	320
Other current assets	114	183
Total current assets	221,005	190,879
Marketable securities, non-current	3,948	47,260
Property and equipment, net	3,217	1,479
Intangible assets, in-process research and development	—	1,870
Goodwill	1,585	1,585
Other assets	193	139
Total assets	$ 229,948	$ 243,212
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued liabilities	$ 9,512	$ 8,704
Accrued compensation and employee benefits	2,020	2,853
Escrow liability	-	275
Deferred revenues	9,524	9,050
Total current liabilities	21,056	20,882
Deferred revenues, non-current	8,948	13,149
Contingent consideration liability	—	1,800
Deferred tax liability	—	748
Total liabilities	30,004	36,579
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.01 par value; 160,000,000 shares authorized, 69,802,697 and 69,062,394 shares issued and outstanding at June 30, 2015, and December 31, 2014, respectively	698	690
Additional paid-in capital	545,244	534,518
Accumulated deficit	(345,995)	(328,550)
Accumulated other comprehensive loss	(3)	(25)
Total stockholders' equity	199,944	206,633
Total liabilities and stockholders' equity	$ 229,948	$ 243,212

See accompanying notes.

SANGAMO BIOSCIENCES, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited; in thousands, except per share amounts)

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Revenues:				
Collaboration agreements	$ 7,801	$ 9,721	$ 20,472	$ 17,289
Research grants	557	664	1,377	1,212
Total revenues	8,358	10,385	21,849	18,501
Operating expenses:				
Research and development	15,618	13,460	30,598	25,543
General and administrative	5,017	3,972	9,749	7,616
Total operating expenses	20,635	17,432	40,347	33,159
Loss from operations	(12,277)	(7,047)	(18,498)	(14,658)
Interest and other income, net	151	66	305	105
Loss before income taxes	(12,126)	(6,981)	(18,193)	(14,553)
Benefit from income taxes	-	—	748	—
Net loss	$ (12,126)	$ (6,981)	$ (17,445)	$ (14,553)
Basic and diluted net loss per share	$ (0.17)	$ (0.10)	$ (0.25)	$ (0.22)
Shares used in computing basic and diluted net loss per share	69,684	67,980	69,485	65,603

See accompanying notes.

SANGAMO BIOSCIENCES, INC.

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(Unaudited; in thousands)

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Net loss	$ (12,126)	$ (6,981)	$ (17,445)	$ (14,553)
Change in unrealized gain (loss) on available-for-sale securities	(28)	12	22	21
Comprehensive loss	$ (12,154)	$ (6,969)	$ (17,423)	$ (14,532)

See accompanying notes.

SANGAMO BIOSCIENCES, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited: in thousands)

	Six months ended June 30,	
	2015	**2014**
Operating Activities:		
Net loss	$ (17,445)	$ (14,553)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	428	250
Amortization of premium on marketable securities	464	583
Stock-based compensation	5,836	4,036
Change in fair value of contingent consideration liability	(1,800)	80
Intangible impairment	1,870	—
Benefit from income taxes	(748)	—
Net changes in operating assets and liabilities:		
Interest receivable	30	27
Accounts receivable	5,189	(3,814)
Prepaid expenses and other assets	(131)	(1,076)
Accounts payable and accrued liabilities	449	1,329
Accrued compensation and employee benefits	(833)	(1,221)
Deferred revenues	(3,727)	17,164
Net cash provided by / (used in) operating activities	(10,418)	2,805
Investing Activities:		
Purchases of marketable securities	(120,895)	(67,003)
Maturities of marketable securities	133,235	50,604
Purchases of property and equipment	(2,082)	(465)
Net cash provided by / (used in) investing activities	10,258	(16,864)
Financing Activities:		
Proceeds from public offering of common stock, net of issuance costs	—	93,796
Taxes paid related to net share settlement of equity awards	(48)	—
Proceeds from issuance of common stock	4,946	9,347
Net cash provided by financing activities	4,898	103,143
Net increase in cash and cash equivalents	4,738	89,084
Cash and cash equivalents, beginning of period	6,030	10,186
Cash and cash equivalents, end of period	$ 10,768	$ 99,270
Supplemental disclosure of noncash investing activities:		
Property and equipment included in accrued liabilities	$ 84	$ —

See accompanying notes.

NOTE 1—BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements of Sangamo BioSciences, Inc. ("Sangamo" or the "Company") have been prepared in accordance with U.S. generally accepted accounting principles for interim financial information and pursuant to the rules and regulations of the Securities and Exchange Commission (SEC). Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all adjustments (consisting of normal recurring adjustments) considered necessary for a fair presentation have been included. Operating results for the three and six months ended June 30, 2015 are not necessarily indicative of the results that may be expected for the year ending December 31, 2015. The condensed consolidated balance sheet data at December 31, 2014 were derived from the audited consolidated financial statements included in Sangamo's Form 10-K for the year ended December 31, 2014, as filed with the SEC. These financial statements should be read in conjunction with the financial statements and footnotes thereto for the year ended December 31, 2014, included in Sangamo's Form 10-K, as filed with the SEC.

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, fair value measurements, business combinations including the fair value of the contingent consideration liability for payments to former Ceregene, Inc. (Ceregene) stockholders and intangible assets related to the acquisition of Ceregene, 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.

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 agreements 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 (VSOE), if available; third-party evidence (TPE), if available and VSOE is not available; or the best estimate of selling price (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 (Shire), in January 2012 and Biogen Inc., formerly Biogen Idec Inc. (Biogen) in January 2014 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 the 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 which have not been 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 to the extent such amounts have been agreed to with the respective collaboration partner.

Recent Accounting Standards

In May 2014 the Financial Accounting Standards Board issued ASU 2014-09, *Revenue from Contracts with Customers* (ASU 2014-09). 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, and early application is not permitted. The Company is currently in the process of evaluating the impact of the pending adoption of ASU 2014-09 on its consolidated financial statements.

NOTE 2—FAIR VALUE MEASUREMENT

The Company measures certain financial assets and liabilities at fair value on a recurring basis, including cash equivalents, available-for sale-securities and the contingent consideration liability. The fair value of these assets and contingent liability was 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 the Company's cash equivalents, available-for-sale marketable securities and contingent consideration liability are identified at the following levels within the fair value hierarchy (in thousands):

	June 30, 2015 Fair Value Measurements			
	Total	Level 1	Level 2	Level 3
Assets:				
Cash equivalents:				
Money market funds	$ 7,229	$ 7,229	$ —	$ —
Total	7,229	7,229	—	—
Marketable securities:				
Commercial paper securities	25,549	—	25,549	—
Corporate debt securities	28,491	—	28,491	—
U.S. government sponsored entity debt securities	153,370	—	153,370	—
Total	207,410	—	207,410	—
Total cash equivalents and marketable securities	$ 214,639	$ 7,229	$ 207,410	$ —

	December 31, 2014 Fair Value Measurements			
	Total	Level 1	Level 2	Level 3
Assets:				
Cash equivalents:				
Money market funds	$ 3,182	$ 3,182	$ —	$ —
Total	3,182	3,182	—	—
Marketable securities:				
Commercial paper securities	33,748	—	33,748	—
Corporate debt securities	22,813	—	22,813	—
U.S. government sponsored entity debt securities	163,631	—	163,631	—
Total	220,192	—	220,192	—
Total cash equivalents and marketable securities	$ 223,374	$ 3,182	$ 220,192	$ —
Liabilities:				
Contingent consideration liability	$ 1,800	$ —	$ —	$ 1,800
Total	$ 1,800	$ —	$ —	$ 1,800

Investments

The Company generally classifies its debt instruments as Level 2. Instruments can be 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 October 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.

Subsequent changes in the fair value of this contingent consideration liability are recorded to the research and development (R&D) expense line item in the Condensed Consolidated Statements of Operations as operating expenses. During the six months ended June 30, 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 the in-process research and development (IPR&D) assets acquired from Ceregene (see Note 6).

Fair value as of December 31, 2014	$ 1,800
Change in fair value	(1,800)
Fair value as of June 30, 2015	$ —

NOTE 3—MARKETABLE SECURITIES

Sangamo generally classifies its marketable securities as available-for-sale and records its investments at fair value. Available-for-sale securities are carried at estimated fair value, with the unrealized holding gains and losses included in accumulated other comprehensive income. Investments that have maturities beyond one year as of the end of the reporting period are classified as non-current. The Company's investments are subject to a periodic impairment review, and 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.

The table below summarizes the Company's investments (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized (Losses)	Estimated Fair Value
June 30, 2015				
Cash equivalents:				
Money market funds	$ 7,229	$ —	$ —	$ 7,229
Total	7,229	—	—	7,229
Available-for-sale securities:				
Commercial paper securities	$ 25,536	$ 13	$ —	$ 25,549
Corporate debt securities	28,506	—	(15)	28,491
U.S. government sponsored entity debt securities	153,371	—	(1)	153,370
Total	207,413	13	(16)	207,410
Total cash equivalents and available-for-sale securities	$ 214,642	$ 13	$ (16)	$ 214,639
December 31, 2014				
Cash equivalents:				
Money market funds	$ 3,182	$ —	$ —	$ 3,182
Total	3,182	—	—	3,182
Available-for-sale securities:				
Commercial paper securities	$ 33,715	$ 33	$ —	$ 33,748
Corporate debt securities	22,831	—	(18)	22,813
U.S. government sponsored entity debt securities	163,671	—	(40)	163,631
Total	220,217	33	(58)	220,192
Total cash equivalents and available-for-sale securities	$ 223,399	$ 33	$ (58)	$ 223,374

The Company had no other-than-temporary impairments of its investments for the six months ended June 30, 2015 or the twelve months ended December 31, 2014.

NOTE 4—BASIC AND DILUTED NET LOSS PER SHARE

Basic net loss per share has been computed by dividing the 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 stock options, which are anti-dilutive. The total number of shares subject to stock options outstanding excluded from consideration in the calculation of diluted net loss per share for the three and six months ended June 30, 2015 and 2014 were 7,350,287 and 7,243,724, respectively.

NOTE 5—MAJOR CUSTOMERS, PARTNERSHIPS AND STRATEGIC ALLIANCES

Collaboration Agreements

Collaboration and License Agreement with Biogen Inc. in Human Therapeutics

In January 2014 the Company entered into a Global Research, Development and Commercialization Collaboration and License Agreement (the "Biogen Agreement") with Biogen, pursuant to which Sangamo and Biogen collaborate to discover, develop, seek regulatory approval for and commercialize therapeutics based on Sangamo's zinc finger DNA-binding protein (ZFP) technology for hemoglobinopathies, including beta-thalassemia and sickle cell disease (SCD).

Under the Biogen Agreement, Sangamo and Biogen 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 ZFP Therapeutic developed under the Biogen 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 ZFP Therapeutics intended to treat SCD. For both programs, Biogen is responsible for subsequent world-wide clinical development, manufacturing and commercialization of licensed products developed under the Biogen Agreement. At the end of specified research terms for each program or under certain specified circumstances, Biogen retains 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 product to treat beta-thalassemia and SCD developed under the Biogen Agreement, and Biogen agrees to compensate Sangamo for such co-promotion activities.

Sangamo received an upfront license fee of $20.0 million upon entering into the Biogen Agreement. In addition, the Company will also be eligible to receive $126.3 million in payments upon the achievement of specified research, regulatory, clinical development milestones, as well as $167.5 million in payments upon the achievement of specified commercialization and sales milestones. Biogen reimburses Sangamo for agreed upon costs incurred in connection with research and development activities conducted by Sangamo. In addition, Sangamo is eligible to receive contingent payments upon the achievement of specified regulatory, clinical development, commercialization and sales milestones. The total amount of potential regulatory, clinical development, commercialization and sales contingent payments, assuming the achievement of all specified milestone events in the Biogen Agreement, is $293.8 million, including Phase 1 contingent payments of $7.5 million for each of the beta-thalassemia and SCD programs. In addition, if products are commercialized under the Biogen Agreement, Biogen 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 Biogen Agreement.

All contingent payments under the Biogen Agreement, when earned, will be non-refundable and non-creditable. The Company has evaluated the contingent payments under the Biogen 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 Biogen Agreement, assuming all other applicable revenue recognition criteria have been met.

Subject to the terms of the Biogen Agreement, Sangamo grants Biogen 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 Biogen Agreement. Sangamo also grants Biogen a non-exclusive, world-wide, royalty free, fully paid license, with the right to grant sublicenses, of Sangamo's interest in certain other intellectual property developed pursuant to the Biogen Agreement.

The Company has identified the deliverables within the arrangement as a license to the technology and on-going research services activities. The Company has concluded that the license is not a separate unit of accounting as it does not have stand-alone value to Biogen apart from the research services to be performed pursuant to the Biogen Agreement. As a result, the Company will recognize revenue from the upfront payment on a straight-line basis over a forty-month estimated initial research term during which

the Company will perform research services. As of June 30, 2015, the Company has deferred revenue of $12.4 million related to the Biogen Agreement.

Revenues recognized under the agreement with Biogen for the three and six months ended June 30, 2015 and 2014 are as follows (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Revenue related to Biogen Collaboration:				
Recognition of upfront fee	$ 1,540	$ 1,540	$ 3,063	$ 2,200
Research services	1,701	1,338	3,233	1,761
Total	$ 3,241	$ 2,878	$ 6,296	$ 3,961

Related costs and expenses incurred under the Biogen agreement related to the beta-thalassemia project, which was co-funded with California Institute for Regenerative Medicine (CIRM), were $1.0 million and $1.3 million during the three months ended June 30, 2015 and, 2014, respectively and $2.4 million and $2.5 million during the six months ended June 30, 2015 and, 2014, respectively. Related costs and expenses for other projects including sickle cell disease under the Biogen agreement were $1.0 million and $0.3 million during the three months ended June 30, 2015 and, 2014, respectively and $2.1 million and $0.3 million during the six months ended June 30, 2015 and 2014, respectively.

Collaboration and License Agreement with Shire International GmbH in Human Therapeutics and Diagnostics

In January 2012 the Company entered into a collaboration and license agreement (the "Shire Agreement") with Shire, 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. Under the Shire Agreement, the Company and Shire may 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 will be used for treating or diagnosing hemophilia. In June 2012, Shire selected a fifth gene target for the development of a ZFP Therapeutic for Huntington's disease. Shire has 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. The initial research term of the Shire Agreement is six years and is subject to extensions upon mutual agreement and under other specified circumstances.

Under the terms of the Shire Agreement, the Company is responsible for all research activities through the submission of an IND or European Clinical Trial Application (CTA), while Shire is 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 reimburses 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 addition, the Company will also be eligible to receive $33.5 million in payments upon the achievement of specified research, regulatory, clinical development milestones, including payments for each gene target through the acceptance of an IND or CTA submission totaling $8.5 million, as well as $180 million in payments upon the achievement of specified commercialization and sales milestones. The Company will also be eligible to receive royalty payments that are a tiered double-digit percentage of net sales of licensed product sold by Shire or its sublicensees developed under the collaboration, if any. To date, no products have been approved and therefore no royalty fees have been earned under the Shire Agreement.

All contingent payments under the Shire Agreement, when earned, will be non-refundable and non-creditable. The Company has evaluated the contingent payments under the Shire 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, revenue for the achievement of milestones that are determined to be substantive will be recognized in their entirety in the period 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 Shire Agreement, assuming all other applicable revenue recognition criteria have been met. In 2014 Sangamo recognized a $1.0 million milestone payment related to the hemophilia program.

The Company has identified the deliverables within the arrangement as a license to the technology and on-going research services activities. 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 Agreement. As a result, the Company will recognize revenue from the upfront payment on a straight-line basis over a six-year initial research term during which the Company will perform research services. As of June 30, 2015, the Company has deferred revenue of $6.0 million related to the Shire Agreement.

Revenues recognized under the agreement with Shire for the three and six months ended June 30, 2015 and 2014, were as follows (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Revenue related to Shire Collaboration:				
Recognition of upfront fee	$ 542	$ 542	$ 1,083	$ 1,083
Research services	3,894	5,930	8,416	10,910
Total	$ 4,436	$ 6,472	$ 9,499	$ 11,993

Related costs and expenses incurred under the Shire agreement were $4.2 million and $5.6 million during the three months ended June 30, 2015 and 2014, respectively and $8.7 million and $10.4 million during the six months ended June 30, 2015 and 2014, respectively.

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

In July 2007 the Company entered into a license agreement (the "Sigma Agreement") with Sigma-Aldrich Corporation (Sigma). Under the Sigma Agreement, Sangamo agreed 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 Dow AgroSciences LLC (DAS). Under the Sigma Agreement, Sangamo and Sigma agreed to conduct a three-year research program to develop laboratory research reagents using Sangamo's ZFP technology during which time Sangamo agreed to assist Sigma in connection with its efforts to market and sell services employing the Company's ZFP technology in the research field. Sangamo has transferred its ZFP manufacturing technology to Sigma.

In October 2009 the Company expanded the Sigma Agreement. In addition to the original terms of the Sigma 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 Sigma Agreement as expanded in 2009, 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 and a $15.1 million upfront license fee. The upfront license fee was recognized on a straight-line basis from the effective date of the expanded license through July 2010, which represents the period over which Sangamo was obligated to perform research services for Sigma. Sangamo is also eligible to receive commercial license fees of $5.0 million based upon a percentage of net sales. As of June 30, 2015 Sangamo has received the entire $5.0 million of commercial license fees and is eligible to receive royalty payments 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.

Revenues recognized under the agreement with Sigma for the three and six months ended June 30, 2015 and 2014, were as follows (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Revenue related to Sigma Collaboration:				
Royalty revenues	$ 28	$ 97	$ 293	$ 203
License fee revenues	21	—	4,277	179
Total	$ 49	$ 97	$ 4,570	$ 382

Related costs and expenses incurred under the Sigma agreement were $0.1 million and $0.1 million during the three months ended June 30, 2015 and 2014, respectively. Related costs and expenses incurred under the Sigma agreement were $0.3 million and $0.1 million during the six months ended June 30, 2015 and 2014, respectively.

Agreement with Dow AgroSciences in Plant Agriculture

In October 2005 the Company entered into an exclusive commercial license agreement with DAS (the "DAS Agreement"). Under the DAS Agreement, Sangamo provides DAS with access to Sangamo's 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 transcription factors (ZFP TFs) or ZFP nucleases (ZFNs) into humans or animals for diagnostic, therapeutic or prophylactic purposes. The DAS Agreement provided for an initial three-year research term. In June 2008, DAS exercised its option under the agreement to obtain a commercial license to sell products incorporating or derived from plant cells generated using the Company's ZFP technology, including agricultural crops, industrial products and plant-derived biopharmaceuticals. 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 $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. Sangamo will be entitled to 25% of any cash consideration received by DAS under such sublicenses. In December 2010, the Company amended the DAS Agreement to extend the period of reagent manufacturing services and research services through December 31, 2012.

The DAS Agreement also provides for minimum license 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. The Company does not have any ongoing performance obligations under the agreement with DAS. DAS has the right to terminate the agreement at any time; accordingly, the Company's actual license fees over the term of the DAS Agreement could be lower than $25.3 million. In addition, each party may terminate the DAS Agreement upon an uncured material breach by the other party. In the event of any termination of the DAS Agreement, all rights to use the Company's ZFP technology will revert to Sangamo, and DAS will no longer be permitted access to Sangamo's ZFP technology or to develop or, except in limited circumstances, commercialize any products derived from the Company's ZFP technology.

There were no revenues or related costs and expenses recognized under the DAS Agreement during the three and six months ended June 30, 2015 and 2014, respectively.

Funding from Research Foundations

California Institute for Regenerative Medicine - HIV

In October 2009 CIRM, a State of California entity, granted a $14.5 million Disease Team Research Award to develop an HIV/AIDS therapy based on the application of ZFN genome editing technology in hematopoietic stem progenitor cells (HSPCs). The four-year grant supports an innovative research project conducted by a multidisciplinary team of investigators, including investigators from the University of Southern California, City of Hope National Medical Center and Sangamo BioSciences. Sangamo received funds totaling $5.2 million from the total amount awarded based on expenses incurred for research and development efforts by Sangamo as prescribed in the agreement, and subject to its terms and conditions. The award is intended to substantially fund Sangamo's research and development efforts related to the agreement. The State of California has the right to receive, subject to the terms and conditions of the agreement between Sangamo and CIRM, payments from Sangamo resulting from sales of a commercial product resulting from research and development efforts supported by the grant. As of December 31, 2013, all revenues under the award had been recognized and all funds had been received.

There were no revenues attributable to research and development performed under the CIRM 2009 grant agreement during the three and six months ended June 30, 2015 and 2014, respectively. Related costs and expenses incurred under the CIRM grant agreement were $0.0 million and $0.7 million during the three months ended June 30, 2015 and 2014, respectively and $0.2 million and $1.0 million during the six months ended June 30, 2015 and 2014, respectively.

In May 2014 CIRM agreed to fund a $5.6 million Strategic Partnership Award to fund the clinical studies of this potentially curative ZFP Therapeutic for HIV/AIDS based on the application of its ZFN genome editing technology in HSPCs. The four year grant provides matching funds to support evaluation of the Company's stem cell-based ZFP Therapeutic in a clinical trial in HIV-infected individuals conducted at City of Hope. The Company expects funding for this grant to commence in 2015.

There were no revenues attributable to research and development performed under the Strategic Partnership Award during the three and six months ended June 30, 2015 and 2014, respectively. Related costs and expenses incurred under the CIRM Strategic Partnership Award were $0.4 million and $0.0 million during the three months ended June 30, 2015 and 2014, respectively and $0.7 million and $0.0 million during the six months ended June 30, 2015 and 2014, respectively.

California Institute for Regenerative Medicine - Beta-Thalassemia

In May 2013 CIRM granted Sangamo a $6.4 million Strategic Partnership Award to develop a potentially curative ZFP Therapeutic for beta-thalassemia based on the application of its ZFN genome editing technology in HSCs. The four-year grant

provides matching funds for preclinical work to support an IND application and a Phase 1 clinical trial in transfusion-dependent beta-thalassemia patients using the BCL11A knockout strategy. On May 13, 2015, Sangamo announced a consolidated development path for its beta-thalassemia and SCD programs using the "BCL11A Enhancer" target. Due to the switch to the BCL11A Enhancer strategy, CIRM and Sangamo terminated the Strategic Partnership Award as of June 30, 2015. Sangamo agreed to return $3.0 million in unused funds received from CIRM under the award within 90 days of the grant termination date.

Revenue attributable to research and development performed under the CIRM grant agreement for beta-thalassemia was $0.5 million and $0.3 million during the three months ended June 30, 2015 and 2014, respectively and $1.2 million and $0.7 million during the six months ended June 30, 2015 and 2014, respectively. Related costs and expenses incurred under the CIRM grant agreement were $0.5 million and $0.4 million during the three months ended June 30, 2015 and 2014, respectively and $1.2 million and $0.7 million during the six months ended June 30, 2015 and 2014, respectively.

NOTE 6—INTANGIBLE ASSETS

Intangible assets for IPR&D consisted of two clinical product candidates from our 2013 acquisition of Ceregene. IPR&D is an intangible asset classified as indefinite-lived until the completion or abandonment of the associated research and development effort, and is amortized over an estimated useful life to be determined at the date the project is completed.

The carrying values of these intangibles assets are as follows (in thousands):

	As of June 30, 2015	As of December 31, 2014
CERE-110 for the treatment of Alzheimer's disease	$ —	$ 1,640
CERE-120 for the treatment of Parkinson's disease	—	230
Total identifiable intangible assets	$ —	$ 1,870

In the first quarter of 2015, the Company received clinical data that demonstrated no statistically significant difference between the control group and the group treated with CERE-110 for Alzheimer's disease. Subsequently, 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. Given these results, the Company does not believe the programs have an alternative future use for itself or other market participants. Accordingly, during the six months ended June 30, 2015, the Company recognized a $1.9 million impairment charge related to these assets. The impairment is recorded in research and development expense in the accompanying condensed consolidated statements of operations.

NOTE 7—INCOME TAXES

The Company maintains deferred tax assets that 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. These deferred tax assets include net operating loss carryforwards, research credits and capitalized research and development costs. Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain based on Sangamo's history of losses. Accordingly, the Company's net deferred tax assets have been fully offset by a valuation allowance. Utilization of operating losses and credits may be subject to substantial annual limitation due to ownership change provisions of the Internal Revenue Code of 1986, as amended and similar state provisions. The annual limitation may result in the expiration of net operating losses and credits before utilization.

During the six months ended June 30, 2015 the deferred tax liability of $0.7 million that was recorded upon acquiring the IPR&D assets in 2013 was adjusted due to the impairment of these assets. This resulted in the recognition of a $0.7 million income tax benefit.

NOTE 8—STOCK-BASED COMPENSATION

The following table shows total stock-based compensation expense included in the condensed consolidated statements of operations for the three and six months ended June 30, 2015 and 2014 (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Costs and expenses:				
Research and development	$ 1,734	$ 1,163	$ 3,425	$ 2,236
General and administrative	1,149	966	2,411	1,800
Total stock-based compensation expense	$ 2,883	$ 2,129	$ 5,836	$ 4,036

ITEM 2. 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. You should read the following discussion and analysis along with the financial statements and notes attached to those statements included elsewhere in this report and in our annual report on Form 10-K for the year ended December 31, 2014 as filed with the SEC.

Overview

We are a clinical stage biopharmaceutical company focused on the research, development and commercialization of engineered DNA-binding proteins for the development of novel therapeutic strategies for unmet medical needs. Our current mission is to develop ZFP Therapeutics®, or human therapeutics based on our proprietary zinc finger DNA-binding protein (ZFP) technology, through early stage clinical testing, strategically partner with biopharmaceutical companies at points of value inflection and have the partners execute late-stage clinical trials and commercial development. In the long-term, our goal is to integrate marketing and development operations and to capture the value of late-stage and commercial ZFP Therapeutic products for ourselves.

We and our licensed partners are the leaders in the research, development and commercialization of ZFPs, a naturally occurring class of proteins. We have used our knowledge and expertise to develop a proprietary technology platform. ZFPs can be engineered to make ZFP nucleases (ZFNs), proteins that can be used to modify DNA sequences in a variety of ways and ZFP transcription factors (ZFP TFs), proteins that can be used to turn genes on or off. As ZFPs act at the DNA level, they have broad potential applications in several areas, including human therapeutics, plant agriculture and research reagents, as well as production of transgenic animals and cell-line engineering.

The main focus for our company is the development of novel human therapeutics and we are building a pipeline of ZFP Therapeutics. Our lead ZFP Therapeutic, SB-728-T, a ZFN-modified autologous T-cell product for the treatment of HIV/AIDS, is the first therapeutic application of our ZFN technology and is being evaluated in a Phase 1 and Phase 2 clinical trial in HIV-infected subjects.

In January 2014 we entered into a collaborative partnership with Biogen Inc., formerly Biogen Idec Inc. (Biogen) to research, develop and commercialize our preclinical ZFP Therapeutic development program in hemoglobinopathies, targeting sickle cell disease (SCD) and beta-thalassemia. We also have a collaborative partnership with Shire International GmbH, formerly Shire AG (Shire), to research, develop and commercialize certain of our preclinical ZFP Therapeutic development programs, including programs in hemophilia, Huntington's disease (HD) and other monogenic diseases. We also have proprietary preclinical programs in several lysosomal storage disorders (LSDs). In addition, we have research stage programs in other monogenic diseases, including certain immunodeficiencies, as well as central nervous system (CNS) disorders and cancer immunotherapy.

We believe the potential commercial applications of ZFPs are broad-based and we have entered into strategic partnerships in fields outside human therapeutics to facilitate the sale or licensing of our ZFP platform as follows:

- We have a license agreement with the research reagent company Sigma-Aldrich Corporation (Sigma). Sigma has the exclusive rights to develop and market high value laboratory research reagents based upon our ZFP technology as well as ZFP-modified cell lines for commercial production of protein pharmaceuticals and ZFP-engineered transgenic animals. Sigma is marketing ZFN-derived gene editing tools under the trademark CompoZr®.
- We have a license agreement with Dow AgroSciences, LLC (DAS), a wholly owned subsidiary of Dow Chemical Corporation. Under the agreement, we have provided DAS with access to our ZFP technology and the exclusive rights to use it to modify the genomes or alter protein expression of plant cells, plants or plant cell cultures. DAS markets our ZFN technology under the trademark EXZACT™ Precision Technology. We have retained rights to use plants or plant-derived products to deliver ZFP TFs or ZFNs into human or animals for diagnostic, therapeutic or prophylactic purposes.

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, payments from corporate collaborations and research grants.

For the three months ended June 30, 2015, we incurred a consolidated net loss of $12.1 million, or $0.17 per share, compared to a net loss of $7.0 million, or $0.10 per share, for the same period in 2014. For the six months ended June 30, 2015, we incurred a consolidated net loss of $17.4 million, or $0.25 per share, compared to a net loss of $14.6 million, or $0.22 per share, for the same period in 2014. As of June 30, 2015, we had cash, cash equivalents, marketable securities and interest receivable totaling $218.6 million compared to $226.6 million as of December 31, 2014. As of June 30, 2015, we had an accumulated deficit of $346.0 million.

Our revenues have consisted primarily of revenues from partnerships of our ZFP technology platform in both therapeutic and non-therapeutic applications, including license fees, research reimbursement and milestones, royalties, as well as revenues from 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 current terms.

In the development of our ZFP technology platform, we are focusing our resources on higher-value ZFP Therapeutic product development and less on our non-therapeutic applications. Development of novel therapeutic products is costly and is subject to a lengthy and uncertain regulatory process at the FDA. Our future products will be gene-based therapeutics. Adverse events in both our own clinical program and other programs may have a negative impact on regulatory approval, the willingness of potential commercial partners to enter into agreements and public perception.

Critical Accounting Estimates

The accompanying discussion and analysis of our financial condition and results of operations are based upon our condensed consolidated financial statements and the related disclosures, which have been prepared in accordance with generally accepted accounting principles 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 that there have been no significant changes in our critical accounting policies and estimates disclosed in our Annual Report on Form 10-K for the year ended December 31, 2014, as filed with the SEC.

Results of Operations

Three and six months ended June 30, 2015 and 2014

Revenues

	Three months ended June 30, (in thousands, except percentage values)				Six months ended June 30, (in thousands, except percentage values)			
	2015	2014	Change	%	2015	2014	Change	%
Revenues:								
Collaboration agreements	$ 7,801	$ 9,721	$(1,920)	(20%)	$20,472	$17,289	$ 3,183	18%
Research grants	557	664	(107)	(16%)	1,377	1,212	165	14%
Total revenues	$ 8,358	$10,385	$(2,027)	(20%)	$21,849	$18,501	$ 3,348	18%

Total revenues consist 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 Biogen, Shire, DAS and Sigma.

Revenues from our corporate collaboration agreements were $7.8 million for the three months ended June 30, 2015, compared to $9.7 million in the corresponding period in 2014. The $1.9 million decrease in collaboration agreements revenues was primarily due to a decrease of $2.0 million in revenues related to our collaboration and license agreement with Shire and a $0.2 million decrease for royalty payment obligations under our license agreement with Sigma and other strategic partners, partially offset by an increase of $0.4 million in revenues related to our collaboration and license agreement with Biogen. The revenues from Shire included $3.9 million from research services and $0.5 million related to partial recognition of an upfront license fee of $13.0 million. The revenues from Biogen included $1.7 million from research services and partial recognition of an upfront payment of $20.0 million. Research grant revenues were approximately $0.6 million for the three months ended June 30, 2015, compared to $0.7 million in the corresponding period in 2014.

Revenues from our corporate collaboration agreements were $20.5 million for the six months ended June 30, 2015, compared to $17.3 million in the corresponding period in 2014. The increase of $3.2 million in collaboration agreement revenues was primarily attributable to a $4.2 million increase in revenues related to our agreement with Sigma and a $2.3 million increase in revenues related to our agreement with Biogen, partially offset by a $2.5 million decrease in revenues related to our agreement with Shire and $0.8 million decrease under our license agreement with Open Monoclonal Technology, Inc. Research grant revenues were $1.4 million for the six months ended June 30, 2015, compared to $1.2 million in the corresponding period in 2014.

Operating Expenses

	Three months ended June 30, (in thousands, except percentage values)				Six months ended June 30, (in thousands, except percentage values)			
	2015	2014	Change	%	2015	2014	Change	%
Operating expenses:								
Research and development	$15,618	$13,460	$ 2,158	16%	$30,598	$25,543	$ 5,055	20%
General and administrative	5,017	3,972	1,045	26%	9,749	7,616	2,133	28%
Total expenses	$20,635	$17,432	$ 3,203	18%	$40,347	$33,159	$ 7,188	22%

Research and development

Research and development expenses consist primarily of salaries and personnel related expenses, including stock-based compensation, laboratory supplies, preclinical and clinical studies, manufacturing expenses, allocated facilities expenses, subcontracted research expenses and expenses for technology licenses. In 2015, we established a Technical Operations group to manage the relationships with third-party vendors used in our manufacturing processes as well as to improve our process development and increase our overall manufacturing capabilities. 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 HIV/AIDS program in the clinic and if we are able to move our earlier stage ZFP Therapeutic product candidates into clinical trials. We also expect that expenses related to research performed under our collaboration and license agreements with Biogen and Shire will increase our research and development expenses during the terms of the agreements. Pursuant to the terms of the agreements with Biogen and Shire, future expenses for research activities under the collaboration will be reimbursed, including internal employee and external research costs related to the programs. The reimbursement for these services will be recognized as revenue as the expenses are incurred and collection is reasonably assured.

Research and development expenses were $15.6 million for the three months ended June 30, 2015, compared to $13.5 million in the corresponding period in 2014. The increase of $2.1 million in research and development expenses was primarily due to increases of $0.7 million in salaries and benefits and $0.6 million in stock-based compensation expense as well as a $0.8 million increase in facilities and lab supply expenses. These increase in operating expenses are primarily attributable to increased headcount in the Technical Operations group.

Research and development expenses were $30.6 million for the six months ended June 30, 2015, compared to $25.5 million in the corresponding period in 2014. The increase of $5.1 million in research and development expenses was primarily due to an increase of $1.6 million in salaries and benefits and $1.2 million in stock-based compensation expense as well as $0.6 million increase in facilities expense related to increased headcount in the Technical Operations group. Additionally, the increase was partially due to $0.7 million increase in clinical trial and manufacturing expenses.

General and administrative

General and administrative expenses consist primarily of salaries and personnel related expenses, including stock-based compensation, other expenses for executive, finance and administrative personnel, professional fees, allocated facilities expenses, patent prosecution expenses and other general corporate expenses. As we continue to pursue clinical and commercial development of our therapeutic programs, we expect the business aspects of the Company to become more complex. In the future we may be required to add personnel and incur additional expenses related to the maturity of our business.

General and administrative expenses were $5.0 million for the three months ended June 30, 2015 compared to $4.0 million for the corresponding period in 2014. The increase was primarily related to an increase of $0.6 million in professional fees and consulting expense, $0.2 million in stock-based compensation expense and $0.2 million in salaries and benefits.

General and administrative expenses were $9.7 million for the six month period ended June 30, 2015 and $7.6 million for the corresponding period in 2014. The increase was primarily related to an increase of $1.0 million in professional fees and consulting expense, $0.6 million in stock-based compensation expense and $0.4 million in salaries and benefits.

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.

As of June 30, 2015, we had cash, cash equivalents, marketable securities and interest receivable totaling $218.6 million compared to $226.6 million as of December 31, 2014.

Our most significant use of capital pertains to salaries and benefits for our employees and external development expenses, such as manufacturing and clinical trial activities, related to our ZFP Therapeutic programs. Our cash and investment balances are held in a variety of interest bearing instruments, which can include obligations of U.S. government agencies, U.S. treasury debt securities, corporate debt securities, commercial paper 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.

Under our agreement with Shire, we received an upfront license fee of $13.0 million in 2012. Shire will reimburse us for agreed upon costs incurred in connection with research and development activities conducted by us. We are also eligible to receive milestone payments based on our achievement of specified research, regulatory, clinical development, commercialization and sales milestones, which depends upon ours and Shire's ability to continue to progress our programs under collaboration. In 2014 we recognized $1.0 million milestone related to our hemophilia program. We will also be eligible to receive royalty payments that are a tiered double-digit percentage of net sales of products developed under the collaboration, if any.

Under our agreement with Biogen, we received an upfront license fee of $20.0 million in 2014. Biogen will reimburse us for agreed upon costs incurred in connection with research and development activities conducted by us. In addition, we are eligible to receive development milestone payments upon the achievement of specified regulatory, clinical development and commercialization milestones. We will also be eligible to receive incremental royalties for each licensed product that are a tiered double-digit percentage of annual net sales of such product, if any.

Cash Flow

Operating activities. Net cash used in operating activities for the six months ended June 30, 2015 was $10.4 million. Net cash provided by operating activities for the six months ended June 30, 2014 was $2.8 million. Net cash used in operating activities for the six months ended June 30, 2015 primarily reflected the increases in net loss for the period as well as a decrease in deferred revenue, partially offset by the increases in stock-based compensation and a decrease in accounts receivable. Net cash used in operating activities for the six months ended June 30, 2014 primarily reflected the increases in deferred revenues related to our collaboration agreement with Biogen, accounts payable and stock-based compensation, partially offset by an increase in accounts receivable and decrease in accrued compensation.

Investing activities. Net cash provided in investing activities for the six months ended June 30, 2015 was $10.3 million, while cash used in investing activities was $16.9 million for the six months ended June 30, 2014. Cash flows from investing activities for both periods primarily related to purchases and maturities of investments.

Financing activities. Net cash provided by financing activities for the six months ended June 30, 2015 and 2014 was $4.9 million and $103.1 million, respectively. Net cash provided by financing activities for the six month period ended June 30, 2015 was primarily related to the issuance of common stock upon exercise of stock options. Net cash provided by financing activities for the six

month period ended June 30, 2014 was primarily attributable to $93.8 million in net proceeds from the public offering of the Company's common stock completed in March 2014 as well as proceeds from the issuance of common stock upon 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 our rate of cash usage may 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 2016. 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, including ZFP Therapeutic development activities, 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 develop our technology and our ZFP Therapeutic products would be harmed. Furthermore, any sales of additional equity securities 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 factors and are not limited to the following:

- the initiation, progress, timing and completion of clinical trials for our product candidates;
- the outcome, timing and cost of regulatory approvals;
- the success of our collaborations with Shire, Biogen and other partners;
- 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 of procuring clinical and commercial supplies, including the cost to manufacture our ZFP therapeutic products;
- investment made in the development of internal process development and manufacturing capabilities;
- the extent to which we acquire or invest in businesses, products or technologies; and
- the costs of litigation.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our primary exposure to market risk is interest income sensitivity relating to our cash, cash equivalents and investments, which is affected by changes in the general level of U.S. interest rates. We do not have any foreign currency or other derivative financial instruments.

Our market risks at June 30, 2015 have not changed materially from those discussed in Item 7A of our Form 10-K for the year ended December 31, 2014 on file with the SEC.

ITEM 4. CONTROLS AND PROCEDURES

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 Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable, and not absolute, assurance of achieving the desired control objectives. In reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost benefit relationship of possible controls and procedures.

As required by the Securities and Exchange Commission Rule 13a-15(b), we carried out an evaluation, under the supervision of and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this report. Based on the

foregoing, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level.

Change in Internal Control over Financial Reporting

There has been no change in our internal controls over financial reporting during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal controls over financial reporting.

ITEM 5. OTHER INFORMATION

On July 27, 2015, our Board of Directors (the "Board") approved a new form of indemnification agreement (the "Indemnification Agreement") to be entered into with the Company's directors and certain officers to be designated by the Board (each, an "Indemnitee"). The indemnification agreement clarifies and enhances the rights and obligations of the Company and the Indemnitee with respect to indemnification and advancement of expenses provided in the prior form of indemnification agreement and the Company's Certificate of Incorporation.

The Indemnification Agreement requires the Company, among other things, to indemnify the Indemnitee to the fullest extent permitted by applicable law, on the terms set forth in the agreement, against all expenses, liabilities and losses actually and reasonably incurred or paid by the Indemnitee or on the Indemnitee's behalf in connection with certain legal proceedings, including shareholder derivative law suits, by reason of the fact that the Indemnitee was a director, officer, employee or the Company, and to advance expenses incurred by the Indemnitee in defending any proceeding against the Indemnitee with respect to which the Indemnitee may be entitled to indemnification by the Company. The Indemnification Agreement also provides certain exceptions to the Company's obligations of indemnification and specifies the substantive and procedural requirements for determining the indemnifiable amount payable by the Company. In addition, the Indemnification Agreement establishes procedures for the payment of indemnifiable amount in the event of a change of control or the occurrence of other corporate transactions. The foregoing description of the form of Indemnification Agreement is only a summary and is qualified in its entirety by reference to the full text of the form of Indemnification Agreement, which is filed as Exhibit 10.2 to this Quarterly Report on Form 10-Q and is incorporated by reference.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are not party to any material pending legal proceedings.

ITEM 1A. RISK FACTORS

An investment in our common stock involves significant risk. 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. While the risk factors set forth below update and supplement the risk factors set forth in our Annual Report on Form 10-K for the year ended December 31, 2014 (2014 Annual Report), you should review our 2014 Annual Report, including the section under the caption "Item 1A. Risk Factors," together with the other information appearing elsewhere in this report, before making an investment decision regarding our common stock. If any of the risks described below or in our 2014 Annual Report actually occur, our business, financial conditions, results of operation and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or a part of your investment in our common stock. Moreover, the risks described below and in our 2014 Annual Report are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business, operating results, prospects or financial condition. You should carefully consider these risk factors, together with all of the other information included in this Form 10-Q as well as our other publicly available filings with the Securities and Exchange Commission.

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

ZFP Therapeutics have undergone limited testing in humans and our ZFP Therapeutics may fail safety studies in clinical trials.

We are conducting an ongoing Phase 2 clinical trial (SB-728-mR-1401) of our ZFP Therapeutics for the treatment of HIV/AIDS and a Phase 1 study of the same approach in HSPCs. Preliminary data from these studies demonstrates that treatment of aviremic HIV-infected subjects with SB-728-T has been well-tolerated. In addition, data from Phase 1 and several Phase 2 clinical trials of our ZFP Therapeutic, SB-509, for diabetic neuropathy and ALS demonstrated that the drug was well tolerated in these studies. However, if one of our ZFP Therapeutic fails one of its safety studies, it could reduce our ability to attract new investors and corporate partners.

All of these studies are designed primarily to evaluate the safety and tolerability of this ZFP Therapeutic approach. Our clinical studies are a highly visible test of our ZFP Therapeutics and our investors assess the value of our technology primarily based on the continued progress of ZFP Therapeutic products into and through clinical trials. If clinical trials of our ZFP Therapeutic products were halted due to safety concerns, this would negatively affect our operations and the value of our stock.

Our progress in early Phase 1 and Phase 2 trials may not be indicative of long-term efficacy in late stage clinical trials.

The results in early phases of clinical testing are based upon limited numbers of patients and a limited follow-up period. Typically, our Phase 1 clinical trials for indications of safety enroll less than 25 patients. Our Phase 2 and late-stage clinical trials generally enroll a larger number of patients. Accordingly, any positive data obtained in early Phase 1 and Phase 2 trials may not be indicative of long-term efficacy in late-stage clinical trials.

In September 2011, we announced preliminary data from our clinical program to develop SB-728-T for the treatment of HIV/AIDS which is now in Phase 2 clinical testing. The data demonstrated a statistically significant relationship between SB-728-T and the reduction of HIV viral load. In January 2012, we initiated a Phase 2 clinical study (SB-728-902, Cohort 5) and a Phase 1/2 clinical study (SB-728-1101) for the treatment of HIV/AIDS. In December 2013, we presented data from all cohorts of these two clinical trials. Three of seven evaluable subjects in Cohort 5 showed a decrease of greater than one log in their viral load during a sixteen week treatment interruption (TI) of their antiretroviral therapy (ART) with one subject achieving a transiently undetectable viral load during the TI period and one subject achieving control of their viral load during TI for a prolonged period (>70 weeks as of January 2015). Two of three additional subjects, enrolled in Cohort 3* of this study, have demonstrated notable reductions in viral load during a TI from ART. Additional data were presented from the Company's Phase 1 study (SB-728-902, Cohorts 1-3) that demonstrated a long-term decrease in the peripheral blood mononuclear cell (PBMC) HIV reservoir using a sensitive test for integrated HIV DNA in nine of nine subjects over a 36 month period (median decrease 0.9 logs). Additional subjects were enrolled into the SB-728-1101 study to define the optimum dose of Cytoxan required to safely enhance engraftment and an additional 12 subjects have been enrolled to further test this dose including nine subjects in an ongoing Phase 2 clinical trial (SB-728mR-T-1401) that is also testing repeat dosing of modified T-cells. However, there is no guarantee that these and other future studies of SB-728-T in later stage trials involving larger patient groups may produce positive or similar results as those obtained in earlier 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. Failure to confirm favorable results from earlier trials by demonstrating the safety and effectiveness of our ZFP Therapeutic products in late stage clinical trials with larger patient populations could have a material adverse effect on our business that would cause our stock price to decline significantly.

Our potential therapeutic products are subject to a lengthy and uncertain regulatory process, and we may encounter unanticipated toxicity or adverse events or fail to demonstrate efficacy, causing us to delay, suspend or terminate the development of a ZFP Therapeutic. If these potential products are not approved, we will not be able to commercialize those products.

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 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. Clinical trials are subject to oversight by institutional review boards and the FDA. In addition, our proposed clinical studies require review from the Recombinant DNA Advisory Committee (RAC), which is the advisory board to the National Institutes of Health (NIH), focusing on clinical trials involving gene transfer. We will typically submit a proposed clinical protocol and other product-related information to the RAC three to six months prior to the expected IND application filing date.

Clinical trials:

- must be conducted in conformance with the FDA's good clinical practices, within the guidelines of the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) and other applicable regulations;
- must meet requirements for Institutional Review Board (IRB) oversight;
- must follow Institutional Biosafety Committee (IBC) and NIH RAC guidelines where applicable;
- must meet requirements for informed consent;
- are subject to continuing FDA oversight;
- may require oversight by a Data Safety Monitoring Board (DSMB);
- 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.

While we have stated our goal is to file IND applications for several ZFP Therapeutic programs in the future, we may encounter difficulties that may delay, suspend or scale back our efforts.

We have previously announced a strategy for our ZFP Therapeutic programs that enables the potential filing of two to four new IND applications per year in the foreseeable future. The preparation and submission of IND applications requires us to conduct rigorous and time-consuming preclinical testing, studies, and documentation relating to, among other things, the toxicity, safety, manufacturing, chemistry and clinical protocol of new ZFP Therapeutic products. 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 ZFP Therapeutic 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 be able to find acceptable patients or may experience delays in enrolling patients for our clinical trials.

We may experience difficulties or delays in recruiting and enrolling a sufficient number of patients to participate in our clinical trials due to a variety of reasons, including competition from other clinical trial programs for the same indication, failure of patients to meet our enrollment criteria and premature withdraws of patients prior to the completion of clinical trials. The FDA and institutional review boards may also require large numbers of patients, and the FDA may require that we repeat a clinical trial. Any delay resulting from our failure to enroll a sufficient number of patients on a timely basis may have a material adverse effect on our business.

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 ZFP Therapeutics 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 clinical trials.

Our most advanced clinical program is our Phase 2 trials to evaluate the safety and efficacy of a ZFP Therapeutic for HIV/AIDS. However, the FDA will require additional clinical testing which involves significantly greater resources, commitments and expertise and so it is likely that we would need to enter into a collaborative relationship with a pharmaceutical company 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 with Shire and Biogen to provide funding and assistance in the development of our ZFP Therapeutics through the clinical trial process. Under the agreement with Shire, we are responsible for all activities through submission of IND applications and European CTAs and Shire is responsible for clinical development and commercialization of products arising from the alliance. Under the agreement with Biogen, we are responsible for all research and development through the first human clinical trial for the treatment of beta-thalassemia and both parties are responsible for research and development through the submission of IND for ZFP Therapeutics to treat sickle cell disease (SCD). 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.

Regulatory approval, if granted, will be limited to specific uses or geographic areas, which could limit our ability to generate revenues.

Regulatory approval will be limited to the indicated use for which we can market a product. Further, once regulatory approval for a product is obtained, the product and its manufacturer are subject to continual review. Discovery of previously unknown problems with a product or manufacturer may result in restrictions on the product, manufacturer, and manufacturing facility, including withdrawal of the product from the market. In Japan and Europe, regulatory agencies also set or approve prices.

Even if regulatory clearance of a product is granted, this clearance is limited to those specific states and conditions for which the product is useful, as demonstrated through clinical trials. We cannot ensure that any ZFP Therapeutic product developed by us, alone or with others, will prove to be safe and effective in clinical trials and will meet all of the applicable regulatory requirements needed to receive marketing clearance in a given country.

Outside the United States, our ability to market a product is contingent upon receiving a marketing authorization from appropriate regulatory authorities; therefore we cannot predict whether or when we would be permitted to commercialize our product. These foreign regulatory approval processes include all of the risks associated with FDA clearance described above.

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 ZFP Therapeutic products. If we are unable to find partners or if the partners we find, such as Shire and Biogen, 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 ZFP Therapeutic product development. 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 would not only 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 ZFP Therapeutic candidates for specific genes. 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 a ZFP Therapeutic product 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, including ZFP Therapeutics. However, we may not be able to license the gene transfer technologies required to develop and commercialize our ZFP Therapeutics. 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, the ZFP Therapeutic 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 our ZFP Therapeutics as a nucleic acid that encodes the ZFN or ZFP TF. We use different formulations to deliver the ZFP Therapeutic depending on the required duration of expression, the targeted tissue and the indication that we intend to treat. 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 ZFP Therapeutic 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 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 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 ZFP Therapeutics may not gain market acceptance among physicians, patients, healthcare payers and the medical community.

A number of additional factors may limit the market acceptance of our ZFP Therapeutic products including the following:

- rate of adoption by healthcare practitioners;
- rate of a product's acceptance by the target population;
- timing of market entry relative to competitive products;
- availability of alternative therapies;
- price of our product relative to alternative therapies;
- availability of third-party reimbursement;
- extent of marketing efforts by us and third-party distributors or agents retained by us; and
- side effects or unfavorable publicity concerning our products or similar products.

Therefore, even after we have obtained the required regulatory approval for our ZFP Therapeutic products, we may not be able to commercialize these products successfully if we cannot achieve an adequate level of market acceptance.

We currently rely on third parties to conduct some or all aspects of manufacturing of our ZFP Therapeutic 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 (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 little control over our manufacturers' compliance with these regulations and standards. A 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.

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 HIV/AIDS, 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.

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 ZFP Therapeutics 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 ZFP Therapeutics:
  - small molecule drugs;
  - monoclonal antibodies;
  - recombinant proteins;
  - gene therapy/cDNAs;
  - antisense;
  - siRNA and microRNA approaches, exon skipping;
  - CRISPR/Cas9 technology;
  - TALE proteins and MegaTALs; and
  - meganucleases.
- For our Non-Therapeutic Applications:
  - *For protein production:* gene amplification, meganucleases, TALE technology, insulator technology, mini-chromosomes and CRISPR/Cas9 technology;
  - *For target validation:* antisense, siRNA, TALE technology and CRISPR/Cas9 technology;
  - *For plant agriculture:* recombination approaches, mutagenesis approaches, meganucleases, TALE technology, CRISPR/Cas9 technology, mini-chromosomes; and
  - *For transgenic animals:* somatic nuclear transfer, embryonic stem cell, TALE, CRISPR/Cas9 technology and transposase 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.

Adverse public perception in the field of gene therapy may negatively impact regulatory approval of, or demand for, our potential products.

Our potential therapeutic products are delivered to patients as gene-based drugs, or gene therapy. The clinical and commercial success of our potential products will depend in part on public acceptance of the use of gene therapy for the prevention or treatment of human diseases. Public attitudes may be influenced by claims that gene therapy is unsafe, and, consequently, our products may not gain the acceptance of the public or the medical community. Negative public reaction to gene therapy in general could result in greater government regulation and stricter labeling requirements of gene therapy products, including any of our products, and could cause a decrease in the demand for any products we may develop.

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 a research license and commercial option agreement with DAS through which we provide DAS with access to our proprietary ZFP technology and the 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 under our agreement with DAS was 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, 2014, 2013 and 2012 were $26.4 million, $26.6 million and $22.3 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 June 30, 2015, we had an accumulated deficit of $346.0 million. Since our IPO in 2000, we have generated an aggregate of approximately $331.4 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 ZFP Therapeutic 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 ZFP Therapeutic product development activities. While we believe our financial resources will be adequate to sustain our current operations at least through 2016, we may need to 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 ZFP Therapeutic products. Furthermore, any sales of additional equity securities may result in dilutions 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 and are in the early phases of ZFP Therapeutic product development, 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.

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, however, 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 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.

For some programs, we depend on third party collaborators and strategic partners to design and conduct our clinical trials. 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.

In January 2012, we entered into a collaborative agreement with Shire, pursuant to which we are engaging in a joint program with Shire to research, develop and commercialize human therapeutics and diagnostics for hemophilia, Huntington’s disease and other monogenic diseases based on our ZFP technology. Under this agreement, we are responsible for all research activities through the submission of an IND or CTA, while Shire is 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.

In addition, in January 2014 we entered into a collaborative agreement with Biogen for the clinical development and commercialization of therapeutics based on our ZFP technology for hemoglobinopathies, including beta-thalassemia and SCD. Under the agreement, we are responsible for all discovery, research and development activities through the first human clinical trial for the first ZFP Therapeutic developed for the treatment of beta-thalassemia. In the SCD program, both parties are responsible for research and development activities through the submission of an IND.

Biogen and Shire will have control and broad discretion over all or certain aspects of the clinical development and commercialization of any product developed under their respective agreements, and we will have little, if any, influence on how these programs will be conducted. Our lack of control over the clinical development in our agreement with Biogen and Shire 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 agreement(s), Biogen and Shire 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 fail to devote sufficient resources to the development, manufacturing, marketing or sale of these products. In such a case, we may be required to develop the products either ourselves or seek the support of other partners or collaborators to continue the program. 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 the program.

If we do not successfully commercialize ZFP-based research reagents, ZFP-modified cell lines for commercial protein production, or ZFP-engineered transgenic animals under our license agreement with Sigma-Aldrich Corporation or ZFP-based agricultural products with Dow AgroSciences, or if Sigma-Aldrich Corporation or Dow AgroSciences terminates our agreements, our ability to generate revenue under these license agreements may be limited.

In July 2007, we entered into a license agreement with Sigma to collaborate in the application and development of ZFP-based products for use in the laboratory research reagents markets. The agreement provides Sigma with access to our ZFP technology and the exclusive right to use our ZFP technology to develop and commercialize products for use as research reagents and to offer services in related research fields. Under the agreement, Sigma has 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. In addition, under our license agreement with DAS relating to plant agriculture, DAS has the exclusive right to develop agricultural products using our ZFP technology in plant cells, plants or plant cell cultures. Both Sigma and DAS have the right to sublicense our technology in their respective areas. In addition to upfront payments, we may also receive additional license fees, shared sublicensing revenues, royalty payments and milestone payments depending on the success of the development and commercialization of the licensed products and services covered under both agreements. The commercial milestones and royalties are typically based upon net sales of licensed products.

We cannot be certain that we or our collaboration partners will succeed in the development of commercially viable products in these 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 addition, the respective license agreements may be terminated by Sigma and DAS at any time by providing us with a 90-day notice. In the event Sigma or DAS decides 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 and Business Operation

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.

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.

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 our product development and research activities.

With respect to our present and any future sublicenses, since 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/Cas9 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 could be prevented from making, using, or selling the relevant product or process unless we 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 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 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. To date, we have not experienced significant costs in complying with regulations regarding the use of these materials.

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. We have experienced a rate of employee turnover that we believe is typical of emerging biotechnology companies. 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 ZFP Therapeutic development programs may be delayed or may not succeed.

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.

During the three months ended June 30, 2015, the closing price of our common stock, as reported by the NASDAQ Global Select Market, ranged from a low of $10.35 to high of $15.56. During the fiscal year ended December 31, 2014, our common stock price fluctuated, ranging from a low of $9.85 to a high of $23.86. Volatility in our common stock 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 ZFP Therapeutics;
- 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;
- regulatory developments;
- 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;
- decreases in our cash balances; and
- changes, by one or more of Sangamo’s security analysts, in recommendations, ratings or coverage of our stock.

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.

Anti-takeover provisions in our certificate of incorporation and Delaware law could make an acquisition of the 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.

In addition, our bylaws:

- state that stockholders may not act by written consent but only at a stockholders' meeting;
- 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.

ITEM 6. EXHIBITS

(a) Exhibits:

10.1†	Seventh Amendment to the License Agreement, dated as of January 1, 2015, between the Company and Sigma Aldrich Co., LLC
10.2	Form of Indemnification Agreement
10.3	Amended and Restated Stock Incentive Plan of 2013 (incorporate by reference to Exhibit 10.1 to Form 8-K filed on June 25, 2015)
31.1	Rule 13a — 14(a) Certification by President and Chief Executive Officer
31.2	Rule 13a — 14(a) Certification by Principal Financial and Accounting Officer
32.1	Certification Pursuant to 18 U.S.C. Section 1350
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 requested for certain information contained in this document. Such information has been omitted and filed separately with the Securities and Exchange Commission.*

SIGNATURES

Pursuant to the requirements of the Securities and Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Dated: August 6, 2015

SANGAMO BIOSCIENCES, INC.

/s/ H. WARD WOLFF

H. Ward Wolff
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

NOTE: Portions of this Exhibit are the subject of a Confidential Treatment Request by the Registrant to the Securities and Exchange Commission (the "Commission"). Such portions have been redacted and are marked with a "[***]" in the place of the redacted language. The redacted information has been filed separately with the Commission.

SEVENTH AMENDMENT TO THE LICENSE AGREEMENT

This SEVENTH AMENDMENT TO THE LICENSE AGREEMENT (the " **Seventh Amendment**") is made and entered into as of January 1, 2015 (the "**Seventh Amendment Effective Date** "), by and between **SANGAMO BIOSCIENCES, INC.,** a Delaware corporation having its principal place of business at Point Richmond Tech Center, 501 Canal Boulevard, Suite A100, Richmond, California 94804 ("**Sangamo**"), and **SIGMA-ALDRICH CO., LLC**, a Delaware limited liability company having its principal place of business at 3050 Spruce Street, St. Louis, MO 63103 ("**Sigma**"). Sigma and Sangamo are individually referred to herein as a " **Party**" or collectively as the " **Parties**."

RECITALS

A. Sigma and Sangamo are parties to a License Agreement effective as of July 10, 2007 as previously amended (the "**Agreement**"), under which Sangamo granted to Sigma a certain license to use Sangamo's proprietary zinc finger protein technology in the fields as defined therein.

B. Sigma and Sangamo desire to amend the Agreement in accordance with the amendments below.

Now, therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

The Parties hereby agree to amend the terms of the Agreement as provided below, effective as of the Seventh Amendment Effective Date. Where the Agreement is not explicitly amended, the terms of the Agreement and any prior amendments will remain in force. Capitalized terms used in this Seventh Amendment that are not otherwise defined herein shall have the same meanings as such terms are given in the Agreement or prior amendments.

1. Section 7.5(a) shall be amended to read in its entirety as follows:

"(a) Sigma shall pay to Sangamo on or before each anniversary of the Effective Date up to and including the tenth anniversary of the Effective Date, the minimum annual payment obligation set forth in this Section 7.5 with respect to such anniversary. Such payment obligation for a particular anniversary shall be reduced (but not below zero) by (i) any royalties owed to Sangamo pursuant to Section 7.7 with respect to sales in the first quarter of the calendar year in which such anniversary occurs or (ii) any payments owed to Sangamo pursuant to Section 7.6 with respect to Sublicensing Revenue received by Sigma during the first quarter of such calendar year. Each payment made by Sigma pursuant to this Section 7.5 is referred to as a **"Minimum Annual Payment."**

Anniversaries of the Effective Date	Minimum Annual Payment Obligation
First, Second, Third	$[***]
Fourth, Fifth, Sixth, Seventh	$[***]
Eighth, Ninth, Tenth	$[***]"

2. Section 7.7(a) shall be amended to read in its entirety as follows:

"(a) Sigma shall pay royalties to Sangamo on Net Sales of Licensed Products at the rate of [***] of Net Sales of Licensed Products."

3. The last sentence of Section 7.7(e) shall be deleted.

4. Section 7.8 shall be amended to read in its entirety as follows:

"**7.8** [Intentionally deleted]"

5. Section 11.5(a) shall be amended to read in its entirety as follows:

"**(a)** On written request by Sigma, Sangamo will discuss in good faith with Sigma an appropriate accommodation (which may involve a reduction in certain future payments owed to Sangamo under this Agreement) to reflect the reduced commercial value of the licenses granted to Sigma under this Agreement as a result of activity in the Commercial Field by unlicensed Third Parties that has a material adverse effect on Sigma's ability to exploit its rights under this Agreement."

6. Section 11.5(b) shall be amended to read in its entirety as follows:

"**(b)** On written request by either Party identifying changed circumstances that materially affect the benefits or burdens of such Party under this Agreement, the Parties shall discuss in good faith possible ways of addressing such changed circumstances; provided, however, that Sangamo shall not have any obligations under this Section 11.5(b) with respect to any changed circumstances identified by Sigma concerning the Field."

7. Exhibit D shall be amended to read in its entirety as follows:

"Exhibit D

Mandatory Terms for Limited Use License

(a) the Customer will not transfer the Licensed Product sold to it or any Licensed Product derived therefrom to any other person or entity without such other person or entity entering into a written material transfer agreement with such Customer that (A) provides for a transfer to such person or entity that does not violate or otherwise conflict with the terms of the Use License entered into by such Customer, (B) includes the terms of such Use License and (C) requires such other person or entity to comply with all such terms that applied to such Customer under such Use License;

(b) the Customer's use of all Licensed Products will be limited to the Field; and

(c) the Customer will not use Licensed Products in the Plant Field."

[The remainder of this page was left blank intentionally.]

***** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION**

In witness whereof, the Parties have executed this Seventh Amendment in duplicate originals by their proper officers as of the Seventh Amendment Effective Date.

SIGMA-ALDRICH CO., LLC		**SANGAMO BIOSCIENCES, INC.**	
By:	/s/ Shahed Yousaf	By:	/s/ Edward Lanphier
Name:	Shahed Yousaf	Name:	Edward Lanphier
Title:	VP Technology & Business Development	Title:	President & CEO
Date:	April 15, 2015	Date:	April 15, 2015

***** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION**

Exhibit 10.2

INDEMNIFICATION AGREEMENT

THIS INDEMNIFICATION AGREEMENT (this "**Agreement**") is made as of this [ ] day of [ ], 2015, by and between Sangamo BioSciences, Inc., a Delaware corporation (the "**Company**"), and the indemnitee named on the signature page hereto (the "**Indemnitee**").

WHEREAS, the Company desires to attract and retain the services of highly qualified individuals to act as directors [and officers];

WHEREAS, increased corporate litigation and investigations have subjected directors [and officers] to litigation risks and expenses, and the limitations on the availability and terms of director [and officer] liability insurance have made it increasingly difficult for the Company to attract and retain such persons;

WHEREAS, the Company's Amended and Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation") authorizes the Company to provide indemnification and advancement rights to directors [and officers] through bylaw provisions or through agreements with directors [and officers], or otherwise, to the extent provided therein;

WHEREAS, the Company's Certificate of Incorporation requires that the Company indemnify its directors as authorized by the General Corporation Law of the State of Delaware ("DGCL"), as amended, under which the Company is incorporated, and the Certificate of Incorporation expressly provides that the indemnification provided therein is not exclusive and contemplates that the Company may enter into separate agreements with its directors, officers and other persons to set forth specific indemnification provisions;

WHEREAS, in light of the fact that the Certificate of Incorporation of the Company is subject to change and does not contain all the provisions and protections set forth in this Agreement, the Company has determined that the Indemnitee and other directors [and officers] of the Company may not be willing to serve or continue to serve in such capacities without additional protection;

WHEREAS, the Company desires and has requested the Indemnitee to serve or continue to serve as a director [or officer] of the Company, as the case may be, and has proffered this Agreement to the Indemnitee as an additional inducement to serve in such capacity; and

WHEREAS, the Indemnitee is willing to serve, or to continue to serve, as a director [or officer] of the Company, as the case may be, if the Indemnitee is furnished the indemnity provided for herein by the Company.

NOW, THEREFORE, in consideration of the promises and the covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Company and the Indemnitee intending to be legally bound, do hereby covenant and agree as follows:

1. **Definitions**.

(a) "Change in Control" means, and shall be deemed to have occurred if, (i) any "person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")), other than (x) a trustee or other fiduciary holding securities under an employee benefit plan of the Company acting in such capacity or (y) a corporation owned directly or indirectly by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company, becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the total voting power represented by the Company's then outstanding voting stock, (ii) during any period of two (2) consecutive years (not including any period prior to the execution of this Agreement), (x) individuals who at the beginning of such period constitute the Board of Directors of the Company, and (y) any new director whose election by the Board of Directors or nomination for election by the Company's stockholders was approved by a vote of at least a majority of the directors then still in office who either were directors at the beginning of the period, cease for any reason to constitute a majority thereof, (iii) the stockholders of the Company approve a merger or consolidation of the Company with any other corporation other than a merger or consolidation that would result in the voting stock of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting stock of the surviving entity) at least fifty percent (50%) of the total voting power represented by the voting stock of the Company or such surviving entity outstanding immediately after such merger or consolidation or with the power to elect at least a majority of the board of directors or other governing body of the surviving entity, or (iv) the stockholders of the Company approve a plan of complete liquidation of the Company or an agreement for the sale or disposition by the Company (in one transaction or a series of related transactions) of all or substantially all of the Company's assets.

(b) "Corporate Status" describes the status of a person who is serving or has served (i) as a director [or officer] of the Company, (ii) as a Company employee in a fiduciary capacity with respect to an employee benefit plan of the Company or (iii) as a director [or officer] of any other Entity at the request of the Company. For purposes of subsection (iii) of this Section l(b), a director [or officer] of the Company who is serving or has served as a director [or officer] of a Subsidiary shall be deemed to be serving at the request of the Company.

(c) "Disinterested Director" means a director of the Company who (i) is not and was not a party to the Proceeding in respect of which indemnification is sought by the Indemnitee and (ii) is determined to be "disinterested" under applicable Delaware state law.

(d) "Entity" shall mean any corporation, partnership (general or limited), limited liability company, joint venture, trust, employee benefit plan, company, foundation, association, organization or other legal entity, other than the Company.

(e) "Expenses" shall be construed broadly to mean all direct and indirect fees of any type or nature whatsoever, costs and expenses incurred in connection with any Proceeding, including, without limitation, all attorneys' fees and costs, disbursements and retainers (including, without limitation, any fees, disbursements and retainers incurred by the Indemnitee pursuant to Section 11 hereof), fees and disbursements of experts, witnesses, private investigators and professional advisors (including, without limitation, accountants and investment bankers), court costs, filing fees, transcript costs, fees of experts, travel expenses, duplicating, imaging, printing and binding costs, telephone and fax transmission charges, computer legal research costs, postage, delivery service fees, secretarial services, fees and expenses of third party vendors; the premium, security for, and other costs associated with any bond (including supersedeas or appeal bonds, injunction bonds, cost bonds, appraisal bonds or their equivalents), in each case incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, or otherwise participating in, a Proceeding (including, without limitation, any judicial or arbitration Proceeding brought to enforce the Indemnitee's rights under, or to recover damages for breach of, this Agreement), as well as all other "expenses" within the meaning of that term as used in Section 145 of the DGCL, any federal, state, local or foreign taxes imposed on Indemnitee as a result of the actual or deemed receipt of any payments under this Agreement, ERISA excise taxes and penalties, and all other disbursements or expenses of types customarily and reasonably incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, or otherwise participating in, actions, suits, or proceedings similar to or of the same type as the Proceeding with respect to which such disbursements or expenses were incurred. Expenses also shall include Expenses incurred in connection with any appeal resulting from any Proceeding.

(f) "Indemnifiable Expenses," "Indemnifiable Liabilities" and "Indemnifiable Amounts" shall have the meanings ascribed to those terms in Section 3(a)(i) hereof.

(g) "Independent Counsel" means a law firm, or a person admitted to practice law in any State of the United States, that is experienced in matters of corporation law and neither presently is, nor in the past three years has been, retained to represent: (i) the Company or the Indemnitee in any matter material to either such party (other than with respect to matters concerning the Indemnitee under this Agreement, or of other indemnities under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any law firm or person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or the Indemnitee in an action to determine the Indemnitee's rights under this Agreement.

(h) "Liabilities" shall be broadly construed to mean, without limitation, all judgments, damages, liabilities, losses, penalties, taxes, fines and amounts paid in settlement, in each case, of any type whatsoever, in connection with a Proceeding. References herein to "fines" shall include any excise tax assessed with respect to any employee benefit plan.

(i) "Proceeding" shall be construed broadly to mean, without limitation, any threatened, pending or completed claim, government, regulatory and self-regulatory action, suit, arbitration, mediation, alternate dispute resolution process, investigation (including any internal investigation), inquiry, administrative hearing, appeal, or any other actual, threatened or completed proceeding, whether brought in the right of the Company or otherwise and whether of a civil (including intentional or unintentional tort claims), criminal, administrative, arbitrative, legislative or investigative nature, whether formal or informal, including a proceeding initiated by the Indemnitee pursuant to Section 11 of this Agreement to enforce the Indemnitee's rights hereunder.

(j) "Subsidiary" shall mean any Entity of which the Company owns (either directly or indirectly) either (i) a general partner, managing member or other similar interest or (ii) (A) 50% or more of the voting power of the voting capital equity interests of such Entity, or (B) 50% or more of the outstanding voting capital stock or other voting equity interests of such Entity.

(k) References herein to a director of any other Entity shall include, in the case of any Entity that is not managed by a board of directors, such other position, such as manager or trustee or member of the governing body of such Entity, that entails responsibility for the management and direction of such Entity's affairs, including, without limitation, the general partner of any partnership (general or limited) and the manager or managing member of any limited liability company.

2. **Services by the Indemnitee** . In consideration of the Company's covenants and commitments hereunder, the Indemnitee agrees to serve or continue to serve as either a director on the board of directors of the Company [or as officer, as applicable], so long as the Indemnitee is duly elected or appointed and until such time as the Indemnitee is removed, terminated, or tenders his or her resignation.

3. **Agreement to Indemnify**.

(a) Indemnification. The Company agrees to indemnify the Indemnitee to the fullest extent permitted, and in the manner permitted, by applicable law as in effect as of the date hereof or as such laws may, from time to time, be amended (but only if amended in a way that broadens the right to indemnification or advancement of expenses) as follows:

(i) Indemnification for Third Party Proceedings . Subject to the exceptions contained in Section 4(a) hereof, if the Indemnitee was or is a party to, threatened to be made a party to or otherwise involved in any capacity in, any Proceeding (other than an action by or in the right of the Company) by reason of the Indemnitee's Corporate Status, the Indemnitee shall be indemnified by the Company to the fullest extent permitted by the DGCL, as the same may be amended from time to time, against all Expenses and Liabilities actually and reasonably incurred or paid by the Indemnitee or on the Indemnitee's behalf in connection with such a Proceeding (such Expenses and Liabilities are referred to herein as "Indemnifiable Expenses" and "Indemnifiable Liabilities," respectively, and collectively as "Indemnifiable Amounts"). In addition, the Indemnitee's Corporate Status may allow for indemnification under certain agreements containing indemnity provisions with another Entity or protections under the organization documents of such other Entity. In those instances, the Company shall remain

wholly liable for making any indemnification payments for all Indemnifiable Amounts notwithstanding the payment obligation of such amounts by a third party to the Indemnitee; provided, however, that if and to the extent that the Indemnitee has otherwise actually received payment for Indemnifiable Amounts under any statute, insurance policy, indemnity provision, vote, contract, agreement, or otherwise, the Company shall not be liable under this Agreement to make any payment to the Indemnitee with respect to any such paid Indemnifiable Amounts, except with respect to any excess beyond the amount paid. Nothing hereunder is intended to affect any right of contribution of or against the Company in the event the Company and any other person or persons have co-equal obligations to indemnify (or advance expenses to) the Indemnitee.

(ii) Indemnification in Derivative Actions and Direct Actions by the Company. Subject to the exceptions contained in Section 4(b) hereof, if the Indemnitee was or is a party to, threatened to be made a party to or otherwise involved in any capacity in, any Proceeding by or in the right of the Company to procure a judgment in its favor by reason of the Indemnitee's Corporate Status, the Indemnitee shall be indemnified by the Company against all Indemnifiable Expenses. In addition, the Indemnitee's Corporate Status may allow for indemnification under certain agreements containing indemnity provisions with another Entity or protections under the organization documents of such other Entity. In those instances, the Company shall remain wholly liable for making any indemnification payments for all Indemnifiable Expenses notwithstanding the payment obligation of such amounts by a third party to the Indemnitee; provided, however, that if and to the extent that the Indemnitee has otherwise actually received payment for Indemnifiable Amounts under any statute, insurance policy, indemnity provision, vote, contract, agreement, or otherwise, the Company shall not be liable under this Agreement to make any payment to the Indemnitee with respect to any such paid Indemnifiable Amounts, except with respect to any excess beyond the amount paid. Nothing hereunder is intended to affect any right of contribution of or against the Company in the event the Company and any other person or persons have co-equal obligations to indemnify (or advance expenses to) the Indemnitee.

(b) Additional Indemnification. Notwithstanding any other provision of this Agreement, the Company hereby agrees to indemnify to the fullest extent permitted by law, notwithstanding that such indemnification is not specifically authorized by other provisions of this Agreement, the Certificate of Incorporation, the Company's Second Amended and Restated Bylaws (the "Bylaws") or by statute.

(c) Scope of Indemnity. The actions, suits and Proceedings described in Section 3(a)(i) and Section 3(a)(ii) hereof shall include, for purposes of this Agreement, any actions that involve, directly or indirectly, activities of the Indemnitee both in the Indemnitee's capacities as a Company director, officer, adviser or agent, as applicable, and actions, suits or Proceedings also taken in another capacity while serving as a director, officer, adviser or agent, as applicable, including, but not limited to, actions, suits or Proceedings involving (i) compensation paid to the Indemnitee by the Company, (ii) activities by the Indemnitee on behalf of the Company, including actions in which the Indemnitee is a plaintiff, (iii) actions alleging a misappropriation of a "corporate opportunity," (iv) responses to a takeover attempt or threatened takeover attempt of the Company, (v) transactions by the Indemnitee in Company securities, and (vi) the Indemnitee's preparation for and appearance (or potential appearance) as a witness in any

Proceeding relating, directly or indirectly, to the Company. In addition, the Company agrees that, for purposes of this Agreement, all services performed by the Indemnitee on behalf of, in connection with or related to any Subsidiary of the Company, any employee benefit plan established for the benefit of employees of the Company or any Subsidiary, any corporation or partnership or other entity in which the Company or any Subsidiary has a 5% ownership interest, or any other affiliate, shall be deemed to be at the request of the Company.

(d) In each action or suit described in Section 3(a)(ii) hereof, the Company shall cause its counsel to use its best efforts to obtain from the court in which such action or suit was brought (i) an express adjudication whether the Indemnitee is liable for negligence or misconduct in the performance of the Indemnitee's duty to the Company, and, if the Indemnitee is so liable, (ii) a determination whether and to what extent, despite the adjudication of liability but in view of all the circumstances of the case (including this Agreement), the Indemnitee is fairly and reasonably entitled to indemnification.

4. **Exceptions to Indemnification**. The Indemnitee shall be entitled to indemnification under Section 3(a)(i) and Section 3(a)(ii) hereof in all circumstances other than the following and as provided in Section 15:

(a) Exceptions to Indemnification for Third Party Proceedings. If indemnification is requested under Section 3(a)(i) and there has been a final non-appealable judgment by a court of competent jurisdiction that, in connection with the subject of the Proceeding out of which the claim for indemnification has arisen, (i) the Indemnitee failed to act (x) in good faith and (y) in a manner the Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, or, (ii) with respect to any criminal action or proceeding, the Indemnitee had reasonable cause to believe that the Indemnitee's conduct was unlawful, the Indemnitee shall not be entitled to payment of Indemnifiable Amounts hereunder.

(b) Exceptions to Indemnification in Derivative Actions and Direct Actions by the Company. If indemnification is requested under Section 3(a)(ii) and (i) there has been a final non-appealable judgment by a court of competent jurisdiction that, in connection with the subject of the Proceeding out of which the claim for indemnification has arisen, the Indemnitee failed to act (x) in good faith and (y) in a manner the Indemnitee believed to be in or not opposed to the best interests of the Company, the Indemnitee shall not be entitled to payment of Indemnifiable Expenses hereunder; or (ii) there has been a final non-appealable judgment by a court of competent jurisdiction that the Indemnitee is liable to the Company with respect to any claim, issue or matter involved in the Proceeding out of which the claim for indemnification has arisen, then no Indemnifiable Expenses shall be paid with respect to such claim, issue or matter unless, and only to the extent that, the court of competent jurisdiction in which such Proceeding was brought shall determine upon application that, despite the adjudication of liability, but in view of all the circumstances of the case, the Indemnitee is fairly and reasonably entitled to indemnity for such Indemnifiable Expenses which such court shall deem proper.

(c) For purposes of this Agreement, if the Indemnitee has acted in good faith and in a manner the Indemnitee reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan, the Indemnitee shall be deemed to have acted in a manner not opposed to the best interests of the Company.

5. **Procedure for Payment of Indemnifiable Amounts** .

(a) Subject to Section 9, the Indemnitee shall submit to the Company a written request specifying in reasonable detail the Indemnifiable Amounts for which the Indemnitee seeks payment under Section 3, Section 6, or Section 7 hereof and a short description of the basis for the claim, as well as any supporting documentation. The Company shall pay such Indemnifiable Amounts to the Indemnitee within sixty (60) calendar days of receipt of the request. At the request of the Company, the Indemnitee shall furnish such documentation and information as are reasonably available to the Indemnitee and necessary to establish that the Indemnitee is entitled to indemnification hereunder.

(b) Upon written request by the Indemnitee for indemnification pursuant to the first sentence of Section 5(a) hereof, if required by applicable law and to the extent not otherwise provided pursuant to the terms of this Agreement, a determination with respect to the Indemnitee's entitlement to indemnification shall be made in the specific case as follows (a "Determination"): (i) if a Change in Control shall have occurred and if so requested in writing by the Indemnitee, by Independent Counsel in a written opinion to the Board of Directors; or (ii) if a Change in Control shall not have occurred (or if a Change in Control shall have occurred but the Indemnitee shall not have requested that indemnification be determined by Independent Counsel as provided in subpart (i) of this Section 5(b)), (A) by a majority vote of the Disinterested Directors, even though less than a quorum of the Board of Directors, or (B) by a committee of Disinterested Directors designated by majority vote of the Disinterested Directors, even though less than a quorum of the Board of Directors, or (C) if there are no such Disinterested Directors, or if such Disinterested Directors so direct, by Independent Counsel in a written opinion to the Board of Directors, or (D) by the Company's stockholders in accordance with applicable law (a "Stockholder Determination"). In connection with each meeting at which a Stockholder Determination will be made, the Company shall solicit proxies that expressly include a proposal to indemnify or reimburse the Indemnitee. The Company's proxy statement relating to the proposal to indemnify or reimburse the Indemnitee shall not include a recommendation against indemnification or reimbursement unless the failure to include such a recommendation would violate applicable laws in the reasonable determination of the Company's counsel.

Notice in writing of any Determination as to the Indemnitee's entitlement to indemnification shall be delivered to the Indemnitee promptly after such Determination is made, and if such Determination of entitlement to indemnification has been made by Independent Counsel in a written opinion to the Board of Directors, then such notice shall be accompanied by a copy of such written opinion. If it is determined that the Indemnitee is entitled to indemnification, then payment to the Indemnitee of all amounts to which the Indemnitee is determined to be entitled (other than sums that were already advanced) shall be made within sixty (60) calendar days after such Determination. If it is determined that the Indemnitee is not entitled to indemnification, then the written notice to the Indemnitee (or, if such Determination has been made by Independent Counsel in a written opinion, the copy of such written opinion delivered to the Indemnitee) shall disclose the basis upon which such Determination is based. The Indemnitee shall cooperate with the person, persons, or entity making the Determination with respect to the Indemnitee's entitlement to indemnification, including providing to such person, persons, or entity upon reasonable advance request any documentation or information that is not privileged or otherwise protected from disclosure and that is reasonably available to the Indemnitee and

reasonably necessary to determine whether and to what extent the Indemnitee is entitled to indemnification. The Company shall afford to the Indemnitee and the Indemnitee's representatives ample opportunity to present evidence of the facts upon which the Indemnitee relies for indemnification or reimbursement, together with other information relating to any requested Determination. The Company shall also afford the Indemnitee the reasonable opportunity to include such evidence and information in any Company proxy statement relating to a Stockholder Determination provided that the inclusion of such information does not violate applicable laws in the reasonable determination of the Company's counsel.

(c) If the Determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 5(b) hereof, the Independent Counsel shall be selected as provided in this Section 5(c). If a Change in Control shall not have occurred (or if a Change in Control shall have occurred but the Indemnitee shall not have requested that indemnification be determined by Independent Counsel as provided in subpart (i) of Section 5(b)), then the Independent Counsel shall be selected by the Board of Directors, and the Company shall give written notice to the Indemnitee advising the Indemnitee of the identity of the Independent Counsel so selected. If a Change in Control shall have occurred and the Indemnitee shall have requested that indemnification be determined by Independent Counsel, then the Independent Counsel shall be selected by the Indemnitee (unless the Indemnitee shall request that such selection be made by the Board of Directors, in which case the preceding sentence shall apply), and the Indemnitee shall give written notice to the Company advising it of the identity of the Independent Counsel so selected. In either case, the Indemnitee or the Company, as the case may be, may, within thirty (30) calendar days after such written notice of selection has been given, deliver to the Company or to the Indemnitee, as the case may be, a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the law firm or person so selected does not meet the requirements of "Independent Counsel" as defined in Section 1 hereof, and the objection shall set forth the basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If such written objection is so made and substantiated, the law firm or person so selected may not serve as Independent Counsel unless and until such objection is withdrawn or the Court of Chancery of the State of Delaware or another court of competent jurisdiction in the State of Delaware has determined that such objection is without merit. If the Determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 5(b) hereof and, following the expiration of sixty (60) calendar days after submission by the Indemnitee of a written request for indemnification pursuant to Section 5(a) hereof, Independent Counsel shall not have been selected, or an objection thereto has been made and not withdrawn, then either the Company or the Indemnitee may petition the Court of Chancery of the State of Delaware or other court of competent jurisdiction in the State of Delaware for resolution of any objection that shall have been made by the Company or the Indemnitee to the other's selection of Independent Counsel and/or for appointment as Independent Counsel of a law firm or person selected by such court (or selected by such person as the court shall designate), and the law firm or person with respect to whom all objections are so resolved or the law firm or person so appointed shall act as Independent Counsel under Section 5(b) hereof. Upon the due commencement of any Proceeding pursuant to Section 11(g) hereof, Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing). If the Determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 5(b) hereof, then the Company agrees to

pay the reasonable fees and expenses of such Independent Counsel and to fully indemnify and hold harmless such Independent Counsel against any and all expenses, claims, liabilities, and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

6. **Indemnification for Expenses if the Indemnitee is Wholly or Partly Successful** . Notwithstanding anything contained in this Agreement to the contrary, to the extent that the Indemnitee is or was, or is or was threatened to be made, by reason of the Indemnitee's Corporate Status, a party to any Proceeding and the Indemnitee is successful on the merits or otherwise in defending all claims, issues and matters in such Proceeding, the Indemnitee shall be indemnified against all Indemnifiable Expenses incurred by the Indemnitee or on the Indemnitee's behalf in connection with the investigation, defense, settlement or appeal of such Proceeding. If the Indemnitee is successful on the merits or otherwise in defending one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify, hold harmless and exonerate the Indemnitee for that portion of the Expenses reasonably incurred in connection with defending those claims, issues or matters with respect to which the Indemnitee was successful in defending. For purposes of this Agreement, the term "successful on the merits or otherwise" shall include, but not be limited to, (i) any termination, withdrawal, or dismissal (with or without prejudice) of any Proceeding against the Indemnitee without any express finding of liability or guilt against the Indemnitee, (ii) the expiration of one-hundred twenty (120) days after the making of any claim or threat of a Proceeding without the institution of the same and without any promise or payment made to induce a settlement, and (iii) the settlement of any Proceeding under Section 3(a)(i) or Section 3(a)(ii) hereof pursuant to which the Indemnitee pays less than $100,000. Notwithstanding any of the foregoing, nothing herein shall be construed to limit the Indemnitee's right to indemnification which he or she would otherwise be entitled to in accordance with Section 3 and Section 4 hereof, regardless of the Indemnitee's success in a Proceeding.

7. **Indemnification for Expenses as a Witness** . Anything in this Agreement to the contrary notwithstanding, to the fullest extent permitted by applicable law, to the extent that the Indemnitee, by reason of the Indemnitee's Corporate Status, is or was, or is or was threatened to be made, a witness in any Proceeding to which the Indemnitee is not a party, the Indemnitee shall be indemnified against all Indemnifiable Expenses incurred by the Indemnitee or on the Indemnitee's behalf in connection therewith. Such Indemnifiable Expenses include, but are not limited to, expenses incurred by the Indemnitee in providing, or preparing to provide, testimony, or responding to discovery requests, in connection with any Proceeding, whether civil, criminal, administrative, investigative or legislative (including but not limited to any action or suit by or in the right of the Company to procure judgment in its favor). To the extent permitted by applicable law, the Indemnitee shall be entitled to indemnification for Expenses incurred in connection with being or threatened to be made a witness, as provided in this Section 7, regardless of whether the Indemnitee met the standards of conduct set forth in Sections 4(a) and 4(b) hereof.

8. **Agreement to Advance Expenses; Conditions** . The Company shall pay to the Indemnitee all Indemnifiable Expenses incurred by or on behalf of the Indemnitee in connection with any Proceeding to which the Indemnitee was or is a party or was or is otherwise involved or was or is threatened to be made a party to or was or is otherwise involved in any capacity in any Proceeding by reason of the Indemnitee's Corporate Status, including a Proceeding by or in the right of the Company, in advance of the final disposition of such Proceeding. The Indemnitee

hereby undertakes to repay the amount of Indemnifiable Expenses paid to the Indemnitee if it shall ultimately be determined by final judicial decision of a court of competent jurisdiction, from which decision there is no further right to appeal, that the Indemnitee is not entitled under this Agreement to, or is prohibited by applicable law from, indemnification with respect to such Indemnifiable Expenses. Any advances and undertakings to repay pursuant to this Section 8 shall be unsecured and interest free and without regard to the Indemnitee's ability to repay. Except as set forth in this Section 8, the Company shall not impose on the Indemnitee additional conditions to advancement of Expenses or require from the Indemnitee additional undertakings regarding repayment. Advancements shall include any and all reasonable Expenses incurred pursuing an action to enforce the Indemnitee's right of advancement, including Expenses incurred preparing and forwarding statements to the Company to support the advancements claimed. The Indemnitee shall be entitled to advancement of Indemnifiable Expenses as provided in this Section 8 regardless of any Determination by or on behalf of the Company that the Indemnitee has not met the standards of conduct set forth in Sections 4(a) and 4(b) hereof. The Company shall not seek from a court, or agree to, a "bar order" which would have the effect of prohibiting or limiting the Indemnitee's right to receive advancement of expenses under this Agreement.

The right to advancement of Expenses shall not apply to (i) any action, suit or proceeding against an officer, director or other agent of the Company brought by the Company and approved by a majority of the authorized members of the Board which alleges willful misappropriation of corporate assets by such officer, director or other agent, wrongful disclosure of confidential information, or any other willful and deliberate breach in bad faith of such officer's, director's or other agent's duty to the Company or its stockholders, or (ii) any claim for which indemnification is excluded pursuant to Section 15(a) and Section 15(c) of this Agreement, but shall apply to any Proceeding referenced in Section 15(b) of this Agreement prior to a determination that the person is not entitled to be indemnified by the Company.

9. **Procedure for Advance Payment of Expenses** . The Indemnitee shall submit to the Company a written request specifying in reasonable detail the Indemnifiable Expenses for which the Indemnitee seeks an advancement under Section 8 hereof, together with documentation reasonably evidencing that the Indemnitee has incurred such Indemnifiable Expenses. Payment of Indemnifiable Expenses under Section 8 hereof shall be made no later than thirty (30) calendar days after the Company's receipt of such request.

10. **Presumptions; Burden of Proof; and Defenses.**

(a) In making a Determination with respect to entitlement to indemnification or advancement of expenses hereunder, the person, persons or entity making such Determination shall presume that the Indemnitee is entitled to indemnification or advancement of expenses, as applicable, under this Agreement and the Company shall have the burden of proof to overcome that presumption by clear and convincing evidence to the contrary.

(b) It shall be a defense in any Proceeding pursuant to Section 11 hereof to enforce rights to indemnification under Section 3(a)(i) or Section 3(a)(ii) hereof (but not in any Proceeding pursuant to Section 11 hereof to enforce a right to an advancement of Indemnifiable Expenses under Sections 8 and 9 hereof) that the Indemnitee has not met the standards of

conduct set forth in Section 4(a) or Section 4(b) hereof, as the case may be, but the burden of proving such defense shall be on the Company. With respect to any Proceeding pursuant to Section 11 hereof brought by the Indemnitee to enforce a right to indemnification hereunder, or any Proceeding brought by the Company to recover an advancement of Indemnifiable Expenses (whether pursuant to the terms of an undertaking or otherwise), neither (i) the failure of the Company (including by its directors or independent legal counsel) to have made a Determination prior to the commencement of such Proceeding that indemnification is proper in the circumstances because the Indemnitee has met the applicable standards of conduct, nor (ii) an actual Determination by the Company (including by its directors or independent legal counsel) that the Indemnitee has not met such applicable standards of conduct, shall create a presumption that the Indemnitee has not met the applicable standards of conduct or, in the case of a Proceeding pursuant to Section 11 hereof brought by the Indemnitee seeking to enforce a right to indemnification, be a defense to such Proceeding.

(c) The termination of any Proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, in and of itself, adversely affect the right of the Indemnitee to indemnification hereunder or create a presumption that the Indemnitee did not act in good faith and in a manner the Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, and, with respect to any criminal Proceeding, shall not create a presumption that the Indemnitee had reasonable cause to believe that his or her conduct was unlawful.

(d) For purposes of any Determination of good faith, the Indemnitee shall be deemed to have acted in good faith if the Indemnitee's action is reasonably based on the records or books of account of the Company or other Entity, including financial statements, or on information supplied to the Indemnitee by the officers of the Company or other Entity in the course of their duties, or on the advice of legal counsel for the Company or other Entity or on information or records given or reports made to the Company or other Entity by an independent certified public accountant or by an appraiser or other expert selected by the Company or other Entity. The provisions of this Section 10(d) shall not be deemed to be exclusive or to limit in any way the other circumstances in which the Indemnitee may be deemed or found to have met the applicable standard of conduct set forth in this Agreement.

(e) The knowledge and/or actions, or failure to act, of any other director, officer, agent, or employee of the Company or of another Entity shall not be imputed to the Indemnitee for purposes of determining the Indemnitee's right to indemnification or advancement of Indemnifiable Expenses under this Agreement.

(f) For purposes of determining whether the Indemnitee is entitled to indemnification or advancement of Expenses by the Company pursuant to this Agreement or otherwise, the actions or inactions of any other indemnitee or group of indemnitees shall not be attributed to the Indemnitee.

11. **Remedies of the Indemnitees**.

(a) Right to Petition Court. In the event that the Indemnitee makes a request for payment of Indemnifiable Amounts under Section 3 or Section 5 hereof or a request for an advancement of Indemnifiable Expenses under Sections 8 or Section 9 hereof and the Company fails to make such payment or advancement in a timely manner in accordance with the terms of this Agreement, the Indemnitee may petition a court to enforce the Company's obligations under this Agreement. On receipt of an application, the court, after giving any notice the court considers necessary, may order indemnification (and/or advancement) if it determines the Indemnitee is fairly and reasonably entitled to indemnification (and/or reimbursement) in view of all the relevant circumstances (including this Agreement).

(b) Right of Indemnitee to Appeal an Adverse Determination by Board . If a Determination is made by the Company's Board of Directors or a committee thereof that the Indemnitee is not entitled to indemnification, upon written request of the Indemnitee and the Indemnitee's delivery of $500 to the Company, the Company shall cause a new Determination to be made by the Company's stockholders at the next regular or special meeting of stockholders. Unless a court determines otherwise, such Determination by the Company's stockholders shall be binding and conclusive for all purposes of this Agreement.

(c) Expenses. The Company agrees to reimburse the Indemnitee in full for any Expenses actually and reasonably incurred by the Indemnitee in connection with investigating, preparing for, litigating, defending or settling any action brought by the Indemnitee under Section 11 hereof, regardless of whether Indemnitee is ultimately determined to be entitled to indemnification, advancement or other remedies under this Agreement.

(d) Costs of Determination. All costs of making the Determination with respect to entitlement to indemnification or advancement of expenses hereunder shall be borne solely by the Company, including, but not limited to, the costs of legal counsel, proxy solicitations and judicial Determinations.

(e) Validity of Agreement. The Company shall be precluded from asserting in any Proceeding, including, without limitation, an action under Section 11(a) hereof, that the provisions of this Agreement are not valid, binding and enforceable or that there is insufficient consideration for this Agreement and shall stipulate in court that the Company is bound by all the provisions of this Agreement.

(f) Failure to Act Not a Defense . The failure of the Company (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a Determination concerning the permissibility of the payment of Indemnifiable Amounts or the advancement of Indemnifiable Expenses under this Agreement shall not be a defense in any action brought under Section 11(a) hereof, and shall not create a presumption that such payment or advancement is not permissible.

(g) Entitlement to Indemnification; Independent Counsel . In the event that (i) a Determination is made pursuant to Section 5 hereof that the Indemnitee is not entitled to indemnification under this Agreement, (ii) if the Determination of entitlement to indemnification

is not to be made by Independent Counsel pursuant to Section 5(b) hereof, no Determination of entitlement to indemnification shall have been made pursuant to Section 5(b) hereof within sixty (60) calendar days after receipt by the Company of the Indemnitee's written request for indemnification, (iii) if the Determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 5(b) hereof, no Determination of entitlement to indemnification shall have been made pursuant to Section 5(b) hereof within eighty (80) calendar days after receipt by the Company of the Indemnitee's written request for indemnification, unless an objection to the selection of such Independent Counsel has been made and substantiated and not withdrawn, in which case the applicable time period shall be seventy (70) calendar days after the Court of Chancery of the State of Delaware or another court of competent jurisdiction in the State of Delaware (or such person appointed by such court to make such Determination) has determined or appointed the person to act as Independent Counsel pursuant to Section 5(b) hereof, (iv) payment of Indemnified Amounts payable pursuant to Section 6 or Section 7 hereof is not made within sixty (60) calendar days after receipt by the Company of a written request therefor, or (v) payment of Indemnified Amounts payable pursuant to Section 6 or Section 7 hereof is not made within sixty (60) calendar days after a Determination has been made pursuant to Section 5(b) hereof that the Indemnitee is entitled to indemnification, then in each instance described in clauses (i) through (v), the Indemnitee shall be entitled to seek an adjudication by the Court of Chancery of the State of Delaware of the Indemnitee's entitlement to such indemnification or advancement of Indemnifiable Expenses.

(h) Not Prejudiced by Adverse Determination. In the event that a Determination shall have been made pursuant to Section 5(b) hereof that the Indemnitee is not entitled to indemnification, any Proceeding commenced pursuant to this Section 11 shall be conducted in all respects as a de novo trial, or arbitration, on the merits and the Indemnitee shall not be prejudiced by reason of that adverse Determination.

12. **Settlement of Proceedings**.

(a) The Indemnitee agrees that it will not settle, compromise or consent to the entry of any judgment as to the Indemnitee in any pending or threatened Proceeding (whether or not the Indemnitee is an actual or potential party to such Proceeding) in which Indemnitee has sought indemnification hereunder without the Company's prior written consent, which consent will not be unreasonably withheld, unless such settlement, compromise or consent respecting such Proceeding includes an unconditional release of the Company and does not (i) require or impose any injunctive or other non-monetary remedy on the Company or its affiliates, (ii) require or impose an admission or consent as to any wrongdoing by the Company or its affiliates, or (iii) otherwise result in a direct or indirect payment by or monetary cost to the Company or its affiliates.

(b) The Company agrees that it will not settle, compromise or consent to the entry of any judgment as to the Indemnitee in any pending or threatened Proceeding (whether or not the Indemnitee is an actual or potential party to such Proceeding) in which the Indemnitee has sought indemnification hereunder without the Indemnitee's prior written consent, which consent shall not be unreasonably withheld, unless such settlement, compromise or consent includes an unconditional release of the Indemnitee and does not (i) require or impose any injunctive or other non-monetary remedy on the Indemnitee, (ii) require or impose an admission or consent as to

any wrongdoing by the Indemnitee or (iii) otherwise result in a direct or indirect payment by or monetary cost to the Indemnitee personally (as opposed to a payment to be made or cost to be paid by the Company on the Indemnitee's behalf).

13. **Notice by the Indemnitee** . The Indemnitee agrees to notify the Company promptly upon being served with any summons, citation, subpoena, complaint, indictment, information, or other document relating to any Proceeding which could reasonably be expected to result in the payment of Indemnifiable Amounts or the advancement of Indemnifiable Expenses hereunder; provided, however, that the failure to give any such notice shall not disqualify the Indemnitee from the right to receive payments of Indemnifiable Amounts or advancements of Indemnifiable Expenses.

14. **Representations and Warranties of the Company** . The Company hereby represents and warrants to the Indemnitee as follows:

(a) Authority. The Company has all necessary power and authority to enter into, and be bound by the terms of, this Agreement, and the execution, delivery and performance of the undertakings contemplated by this Agreement have been duly authorized by the Company.

(b) Enforceability. This Agreement, when executed and delivered by the Company in accordance with the provisions hereof, shall be a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as such enforceability may be limited by equitable principles and applicable bankruptcy, insolvency, moratorium, reorganization or similar laws affecting the enforcement of creditors' rights generally.

(c) No Conflicts. This Agreement, when executed and delivered by the Company in accordance with the provisions hereof, does not, and the Company's performance of its obligations under the Agreement will not, violate the Company's Certificate of Incorporation, Bylaws, other agreements to which the Company is a party to or applicable law.

(d) Insurance. The Company shall use commercially reasonable efforts to cause the Indemnitee, at the Company's sole expense, to be covered by insurance policies providing liability insurance for directors or officers of the Company or of any Subsidiary, if any, in accordance with its or their terms to the same extent as provided to any then-current director or officer of the Company or any Subsidiary under such policy or policies.

15. **Exclusions**. Any other provision herein to the contrary notwithstanding, the Company shall not be obligated pursuant to the terms of this Agreement:

(a) Claims Initiated by Indemnitee . To indemnify Indemnifiable Amounts or advance Indemnifiable Expenses with respect to Proceedings initiated or brought voluntarily by Indemnitee and not by way of defense, except with respect to Proceedings brought to establish, enforce or interpret a right of indemnification of Indemnifiable Amounts or advancement of Indemnifiable Expenses under this Agreement or any other statute or law or otherwise as required under Section 145 of the DGCL, but such indemnification or advancement may be provided by the Company in specific cases if a majority of the total number of authorized members of the Board of Directors of the Company finds it to be appropriate.

(b) Certain Exchange Act Claims. To indemnify Indemnitee in connection with any claim made against Indemnitee for (i) an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Exchange Act or similar provision of state statutory law or common law or (ii) any reimbursement of the Company by Indemnity of any bonus or other incentive-based or equity-based compensation or of any profits realized by Indemnitee from the sale of securities, as required in each case under the Exchange Act (including any such requirements that arise from an accounting restatement of the Company pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 or Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act); provided, however, that to the fullest extent permitted by applicable law and to the extent Indemnitee is successful on the merits or otherwise with respect to any such Proceeding, the Expenses actually and reasonably incurred by Indemnitee in connection with any such Proceeding shall be deemed to be Indemnifiable Expenses that are subject to indemnification hereunder.

(c) Prohibited by Law. To indemnify Indemnitee in connection with any claim made against Indemnitee if prohibited by applicable law; provided, however, that if any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (1) the validity, legality and enforceability of the remaining provisions of this Agreement (including, without limitation, each portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable, that is not itself held to be invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and (2) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each such portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held to be invalid, illegal or unenforcebable.

16. **Covenant Not To Sue, Limitation of Actions and Release of Claims.** No legal action shall be brought and no cause of action shall be asserted by or on behalf of the Company (or any of its subsidiaries) against the Indemnitee, the Indemnitee's spouse, heirs, executors, personal representatives, administrators and estate after the expiration of two years from the date the Indemnitee ceases (for any reason) to serve as either an officer, director, adviser or agent of the Company, and any claim or cause of action of the Company (or any of its subsidiaries) shall be extinguished and deemed released unless asserted by filing of a legal action within such two-year period.

17. **Indemnification of Indemnitee's Estate.** Notwithstanding any other provision of this Agreement, if the Indemnitee is deceased, and indemnification of the Indemnitee would be permitted and/or required under this Agreement, the Company shall indemnify and hold harmless the Indemnitee's estate, spouse, heirs, administrators, personal representatives and executors (collectively, the "Indemnitee's Estate") against, and the Company shall assume, any and all claims, damages, Expenses (including attorneys' fees), penalties, judgments, fines and amounts paid in settlement actually incurred by the Indemnitee or the Indemnitee's Estate in connection with the investigation, defense, settlement or appeal of any action described in Section 3(a)(i) or Section 3(a)(ii) hereof. The Expenses of the Indemnitee's Estate shall be advanced pursuant to Section 8 and Section 9 to the same extent that the Indemnitee would have been entitled to advancement of Expenses had Indemnitee not been deceased.

18. **Noninterference.** The Company shall not seek or agree to any order of any court or other governmental authority that would prohibit or otherwise interfere, and shall not take or fail to take any other action if such action or failure would reasonably be expected to have the effect of prohibiting or otherwise interfering, with the performance of the Company's indemnification, advancement of Expenses or other obligations under this Agreement.

19. **Contract Rights Not Exclusive; Subrogation.** The rights to payment of Indemnifiable Amounts and advancement of Indemnifiable Expenses provided by this Agreement shall be in addition to, but not exclusive of, any other rights that the Indemnitee may have at any time under applicable law, the Company's Bylaws or Certificate of Incorporation, or any other agreement, vote of stockholders or directors (or a committee of directors), insurance policy or otherwise, both as to action in the Indemnitee's official capacity and as to action in any other capacity as a result of the Indemnitee's serving in a Corporate Status. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy, given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy. In the event of any payment to or on behalf of the Indemnitee under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of the Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

20. **Successors.** This Agreement shall be (a) binding upon all successors and assigns of the Company (including any transferee of all or a substantial portion of the business, stock and/or assets of the Company and any direct or indirect successor by merger or consolidation or otherwise by operation of law) and (b) binding on and shall inure to the benefit of the heirs, personal representatives, executors and administrators of the Indemnitee. This Agreement shall continue for the benefit of the Indemnitee and such heirs, personal representatives, executors and administrators after the Indemnitee has ceased to have Corporate Status.

21. **Change in Law**. To the extent that a change in Delaware law (whether by statute or judicial decision) shall permit broader indemnification or advancement of expenses than is provided under the terms of the Certificate of Incorporation of the Company, Bylaws of the Company and this Agreement, the Indemnitee shall be entitled to such broader indemnification and advancements, and this Agreement shall be deemed to be amended to such extent, but only to the extent such amendment permits the Indemnitee to broader indemnification and advancement rights other than Delaware law permitted prior to the adoption of such amendment. In the event of any change in any applicable law, statute or rule which narrows the right of a Delaware corporation to indemnify a member of its board of directors or an officer or advance expenses to such persons, such changes, to the extent not otherwise required by such law, statute or rule to be applied to this Agreement, shall have no effect on this Agreement or the parties' rights and obligations hereunder.

22. **Severability**. Whenever possible, each provision of this Agreement shall be interpreted in such a manner as to be effective and valid under applicable law, but if any provision of this Agreement, or any clause thereof, shall be determined by a court of competent jurisdiction to be

illegal, invalid or unenforceable, in whole or in part, such provision or clause shall be limited or modified in its application to the minimum extent necessary to make such provision or clause valid, legal and enforceable, and the remaining provisions and clauses of this Agreement shall remain fully enforceable and binding on the parties.

23. **Modifications and Waiver**. Except as provided in Section 21 hereof with respect to changes in Delaware law which broaden the right of the Indemnitee to be indemnified by the Company, no supplement, modification or amendment of this Agreement shall be binding unless executed in writing by each of the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions of this Agreement (whether or not similar), nor shall such waiver constitute a continuing waiver.

24. **General Notices**. All notices, requests, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given (a) when delivered by hand, (b) when transmitted by facsimile and receipt is acknowledged, or (c) if mailed by certified or registered mail with postage prepaid, on the third business day after the date on which it is so mailed:

(i) If to the Indemnitee, to the address specified on the signature page hereto;

(ii) If to the Company, to:

Sangamo Biosciences, Inc.
501 Canal Blvd.
Richmond, California 94804
Attention: Chief Executive Officer

or to such other address as may have been furnished in the same manner by any party to the others.

25. **Contribution**. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever other than any of those set forth in Section 4 hereof, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such Proceeding; and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transaction(s).

26. **Governing Law**. This Agreement shall be exclusively governed by and construed and enforced under the laws of the State of Delaware without giving effect to the provisions thereof relating to conflicts of choice of law of such state or any other jurisdiction.

27. **Consent to Jurisdiction**.

(a) Each of the Company and the Indemnitee hereby irrevocably and unconditionally (i) agrees and consents to the jurisdiction of the courts of the State of Delaware for all purposes in connection with any action, suit, or proceeding that arises out of or relates to this Agreement and agrees that any such action instituted under this Agreement shall be brought only in the Court of Chancery of the State of Delaware (or in any other state court of the State of Delaware if the Court of Chancery does not have subject matter jurisdiction over such action), and not in any other state or federal court in the United States of America or any court or tribunal in any other country; (ii) consents to submit to the exclusive jurisdiction of the courts of the State of Delaware for purposes of any action or proceeding arising out of or in connection with this Agreement; (iii) waives any objection to the laying of venue of any such action or proceeding in the courts of the State of Delaware; and (iv) waives, and agrees not to plead or to make, any claim that any such action or proceeding brought in the courts of the State of Delaware has been brought in an improper or otherwise inconvenient forum.

(b) Each of the Company and the Indemnitee hereby consents to service of any summons and complaint and any other process that may be served in any action, suit, or proceeding arising out of or relating to this Agreement in any court of the State of Delaware by mailing by certified or registered mail, with postage prepaid, copies of such process to such party at its address for receiving notice pursuant to Section 24 hereof. Nothing herein shall preclude service of process by any other means permitted by applicable law.

28. **Cooperation and Intent.** The Company shall cooperate in good faith with the Indemnitee and use its best efforts to ensure that the Indemnitee is indemnified and/or reimbursed for liabilities described herein to the fullest extent permitted by law.

29. **Security.** To the fullest extent permitted by applicable law, the Company may from time to time, but shall not be required to, provide such insurance, collateral, letters of credit or other security devices as its Board may deem appropriate to support or secure the Company's obligations under this Agreement.

30. **Conflict With Governing Documents.** To the fullest extent permitted by applicable law, in the event of a conflict between the terms of this Agreement and the terms of the Company's Certificate of Incorporation or Bylaws, the terms of this Agreement shall prevail.

31. **Counterparts**. This Agreement may be executed in one or more counterparts (including by PDF or facsimile), each of which shall for all purposes be deemed to be an original but all of which together shall constitute but one and the same Agreement. Only one such counterpart need be produced to evidence the existence of this Agreement.

32. **Headings; References; Pronouns**. The headings of the sections of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction hereof. References herein to section numbers are to sections of this Agreement. All pronouns and any variations thereof shall be deemed to refer to the singular or plural as appropriate.

33. **Entire Agreement**. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous agreements, understandings and negotiations, written and oral, between the parties with respect to the subject matter of this Agreement, provided, however, that this Agreement is supplemental to and in furtherance of the Company's Certificate of Incorporation, Bylaws, the DGCL and any other applicable law, and shall not be deemed a substitute therefor, and does not diminish or abrogate any rights of the Indemnitee thereunder.

34. **Effective Date.** The provisions of this Agreement shall cover claims, actions, suits and Proceedings whether now pending or hereafter commenced and shall be retroactive to cover acts or omissions or alleged acts or omissions which heretofore have taken place.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

COMPANY:

SANGAMO BIOSCIENCES, INC.

By: _____
Name:
Title:

INDEMNITEE:

By: _____
Name:
Address for notices:

[Signature Page to Indemnification Agreement]

ATTACHMENT A – INSURANCE POLICIES

Exhibit 31.1

CERTIFICATION

I, Edward O. Lanphier II, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Sangamo BioSciences, Inc. ("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 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 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 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:

   (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: August 6, 2015

/s/ Edward O. Lanphier II
Edward O. Lanphier II
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, H. Ward Wolff, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Sangamo BioSciences, Inc. ("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 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 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 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:

   (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: August 6, 2015

/s/ H. Ward Wolff
H. Ward Wolff
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

Each of the undersigned hereby certifies pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 in his capacity as an officer of Sangamo BioSciences, Inc. (the "Company"), that:

(1) the Quarterly Report of the Company on Form 10-Q for the quarterly period ended June 30, 2015, as filed with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; 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/ Edward O. Lanphier II
Edward O. Lanphier II
President and Chief Executive Officer
(Principal Executive Officer)

Date: August 6, 2015

/s/ H. Ward Wolff
H. Ward Wolff
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

Date: August 6, 2015