UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 10-Q

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

For the quarterly period ended September 30, 2016

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: 001-37350

InVivo Therapeutics Holdings Corp.

(Exact name of registrant as specified in its charter)

Nevada	**36-4528166**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
One Kendall Square Suite B14402 Cambridge, MA	**02139**
(Address of principal executive offices)	(Zip code)

(617) 863-5500

(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 Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the 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 October 31, 2016, 32,033,197 shares of the registrant's common stock, $0.00001 par value, were issued and outstanding.

INVIVO THERAPEUTICS HOLDINGS CORP.
Quarterly Report on Form 10-Q for the Quarter Ended September 30, 2016

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PART I — FINANCIAL INFORMATION

SPECIAL NOTE

All share number and share prices presented in this Quarterly Report on Form 10-Q have been adjusted to reflect the 1-for-4 reverse stock split of InVivo Therapeutics Holdings Corp.'s common stock effected on April 8, 2015.

Item 1. Financial Statements.

InVivo Therapeutics Holdings Corp.
Consolidated Balance Sheets
(In thousands, except share and per-share data)
(Unaudited)

	As of	
	September 30, 2016	December 31, 2015
ASSETS:		
Current assets:		
Cash and cash equivalents	$ 37,665	$ 20,194
Restricted cash	361	361
Prepaid expenses and other current assets	413	184
Total current assets	38,439	20,739
Property, equipment and leasehold improvements, net	630	938
Other assets	411	115
Total assets	$ 39,480	$ 21,792
LIABILITIES AND STOCKHOLDERS' EQUITY:		
Current liabilities:		
Accounts payable	$ 556	$ 521
Loan payable, current portion	416	395
Derivative warrant liability	2,695	1,907
Deferred rent, current portion	134	115
Accrued expenses	1,704	374
Total current liabilities	5,505	3,312
Loan payable, net of current portion	960	1,275
Deferred rent, net of current portion	175	276
Total liabilities	6,640	4,863
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.00001 par value, authorized 100,000,000 shares, issued and outstanding 32,033,197 at September 30, 2016; and authorized 50,000,000 shares, issued and outstanding 27,555,948 shares at December 31, 2015	1	1
Additional paid-in capital	184,411	150,497
Accumulated deficit	(151,572)	(133,569)
Total stockholders' equity	32,840	16,929
Total liabilities and stockholders' equity	$ 39,480	$ 21,792

See notes to the unaudited consolidated financial statements.

InVivo Therapeutics Holdings Corp.
Consolidated Statements of Operations
(In thousands, except share and per-share data)
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Operating expenses:				
Research and development	$ 3,294	$ 2,432	$ 8,659	$ 7,280
General and administrative	2,584	3,437	8,573	9,861
Total operating expenses	5,878	5,869	17,232	17,141
Operating loss	(5,878)	(5,869)	(17,232)	(17,141)
Other income (expense):				
Interest income	50	2	133	6
Interest expense	(32)	(32)	(117)	(97)
Derivatives (loss) gain	(336)	3,591	(788)	(11,349)
Other income (expense), net	(318)	3,561	(772)	(11,440)
Net loss	$ (6,196)	$ (2,308)	$ (18,004)	$ (28,581)
Net loss per share, basic and diluted	$ (0.19)	$ (0.09)	$ (0.59)	$ (1.09)
Weighted average number of common shares outstanding, basic and diluted	31,968,357	27,010,444	30,687,263	26,150,525

See notes to the unaudited consolidated financial statements.

InVivo Therapeutics Holdings Corp.
Consolidated Statements of Cash Flows
(In thousands)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2015
Cash flows from operating activities:		
Net loss	$ (18,004)	$ (28,581)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	417	527
Derivatives loss	788	11,349
Common stock issued to 401(k) plan	156	157
Share-based compensation expense	3,571	3,614
Changes in operating assets and liabilities:		
Restricted cash	—	61
Prepaid expenses	(229)	804
Other assets	(308)	3
Accounts payable	35	228
Accrued expenses	1,248	865
Net cash used in operating activities	(12,326)	(10,973)
Cash flows from investing activities:		
Purchases of property and equipment	(96)	(2)
Net cash used in investing activities	(96)	(2)
Cash flows from financing activities:		
Proceeds from exercise of stock options	191	1,009
Proceeds from issuance of stock under ESPP	91	—
Repayment of loan payable	(294)	(155)
Repayment of note payable	—	(18)
Proceeds from exercise of warrants	—	7,788
Proceeds from issuance of common stock and warrants	29,905	11,038
Net cash provided by financing activities	29,893	19,662
Increase in cash and cash equivalents	17,471	8,687
Cash and cash equivalents at beginning of period	20,194	13,459
Cash and cash equivalents at end of period	$ 37,665	$ 22,146

See notes to the unaudited consolidated financial statements.

InVivo Therapeutics Holdings Corp.
Consolidated Statements of Cash Flows (Continued)
(In thousands)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2015
Supplemental disclosure of cash flow information and non-cash transactions:		
Cash paid for interest	$ 76	$ 97
Exercise of equity-classified warrants to common stock	$ 90	$ 228
Reclassification of derivative warrant liability to additional paid-in capital	$ —	$ 16,122

See notes to the unaudited consolidated financial statements.

InVivo Therapeutics Holdings Corp.
Notes to Consolidated Financial Statements for the Quarter Ended September 30, 2016 (Unaudited)
(In thousands, except share and per-share data)

1. NATURE OF OPERATIONS, BASIS OF PRESENTATION AND RECENT ACCOUNTING PRONOUNCEMENTS

Business

InVivo Therapeutics Holdings Corp. was incorporated on April 2, 2003, and on October 26, 2010, acquired the business of InVivo Therapeutics Corporation, which was incorporated on November 28, 2005, and is continuing the existing business operations of InVivo Therapeutics Corporation as a wholly-owned subsidiary of InVivo Therapeutics Holdings Corp. Unless otherwise noted herein, the "Company" or "InVivo" refers to InVivo Therapeutics Holdings Corp. and its wholly-owned subsidiary on a consolidated basis. The Company is a research and clinical-stage biomaterials and biotechnology company with a focus on the treatment of spinal cord injuries. Its proprietary technologies incorporate intellectual property licensed under the Company's exclusive, world-wide license from Boston Children's Hospital and the Massachusetts Institute of Technology, as well as intellectual property that has been developed internally in collaboration with its advisors and partners.

Basis of Presentation

The accompanying unaudited consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States ("GAAP") consistent with those applied in, and should be read in conjunction with, the Company's audited financial statements and related footnotes for the year ended December 31, 2015 included in the Company's Annual Report on Form 10-K as filed with the United States Securities and Exchange Commission ("SEC") on March 4, 2016. The unaudited consolidated financial statements reflect all adjustments, consisting only of normal recurring adjustments, which are, in the opinion of management, necessary for a fair presentation of the Company's financial position as of September 30, 2016 and its results of operations and cash flows for the interim period presented and are not necessarily indicative of results for subsequent interim periods or for the full year. The interim financial statements do not include all of the information and footnotes required by GAAP for complete financial statements as allowed by the relevant SEC rules and regulations; however, the Company believes that its disclosures are adequate to ensure that the information presented is not misleading.

Reverse Stock Split

On April 8, 2015, the Company effected a reverse stock split of its common stock, par value $0.00001 per share, at a ratio of 1-for-4. As a result of the reverse stock split, (i) every four shares of the Company's issued and outstanding common stock were automatically converted into one newly issued and outstanding share of the Company's common stock, without any change in the par value per share; (ii) the number of shares of common stock into which each outstanding warrant or option to purchase common stock is exercisable was proportionally decreased, and (iii) the number of authorized shares of common stock was proportionally decreased. Shares of common stock underlying outstanding stock options and other equity instruments convertible into common stock were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities.

All of the Company's historical share and per share information related to issued and outstanding common stock and outstanding options and warrants exercisable for common stock in these financial statements have been adjusted, on a retroactive basis, to reflect this 1-for-4 reverse stock split.

Recently Issued Accounting Pronouncements

In August 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-15, *Presentation of Financial Statements—Going Concern* (Subtopic 205-40), on disclosure of uncertainties about an entity's ability to continue as a going concern. This guidance addresses management's responsibility in evaluating whether there is substantial doubt about a company's ability to continue as a going concern and to provide related footnote disclosures. The guidance is effective for fiscal years ending after

December 15, 2016 and for annual and interim periods thereafter, with early adoption permitted. The Company is currently evaluating the impact of the adoption of this ASU on the financial statements.

In February 2016, the FASB issued ASU No. 2016-02, *Leases* (Topic 842). The guidance in this ASU supersedes the leasing guidance in Topic 840, *Leases*. Under the new guidance, lessees are required to recognize lease assets and lease liabilities on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the statement of operations. The new standard is effective for annual reporting periods beginning after December 15, 2019. The Company is currently evaluating the impact of the adoption of this ASU on the financial statements.

In March 2016, the FASB issued ASU No. 2016-09, *Compensation – Stock Compensation* ("ASU 2016-09") to require changes to several areas of employee share-based payment accounting in an effort to simplify share-based reporting. The update revises requirements in the following areas: minimum statutory withholding, accounting for income taxes, forfeitures, and intrinsic value accounting for private entities. ASU 2016-09 is effective for annual reporting periods beginning after December 15, 2017. The Company is currently evaluating the impact of the adoption of this ASU on the financial statements.

In August 2016, the FASB issued ASU No. 2016-15, *Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15") to address how certain cash receipts and cash payments are presented and classified in the statement of cash flows in an effort to reduce existing diversity in practice. The update includes eight specific cash flow issues and provides guidance on the appropriate cash flow presentation for each. ASU 2016-15 is effective for annual reporting periods beginning after December 15, 2017. The Company does not expect the adoption of this guidance to have a material impact on the financial statements.

2. CASH AND CASH EQUIVALENTS

As of September 30, 2016, the Company held $37,665 in cash and cash equivalents. From time to time, the Company may have cash balances in financial institutions in excess of insurance limits. The Company has never experienced any losses related to these balances. The Company's cash equivalents are held in money market funds. Cash and cash equivalents consisted of the following (in thousands):

	September 30, 2016	December 31, 2015
Cash	$ (7)	$ 116
Money market funds	37,672	20,078
Total cash and cash equivalents	$ 37,665	$ 20,194

3. RESTRICTED CASH

Restricted cash as of September 30, 2016 was $361 and included $50 of security deposits related to the $311 cash account securing a standby letter of credit in favor of a landlord (see Note 5).

4. FAIR VALUE OF ASSETS AND LIABILITIES

The Company groups its assets and liabilities generally measured at fair value in three levels, based on the markets in which the assets and liabilities are traded and the reliability of the assumptions used to determine fair value.

Level 1 — Valuation is based on quoted prices in active markets for identical assets or liabilities. Level 1 assets and liabilities generally include debt and equity securities that are traded in an active exchange market. Valuations are obtained from readily available pricing sources for market transactions involving identical assets or liabilities.

Level 2 — Valuation is based on observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 — Valuation is based on unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments

whose value is determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

The Company uses valuation methods and assumptions that consider, among other factors, the fair value of the underlying stock, risk-free interest rate, volatility, expected life and dividend rates in estimating fair value for the warrants considered to be derivative instruments (see Notes 10 and 11).

Assets and liabilities measured at fair value on a recurring basis are summarized below (in thousands):

	At September 30, 2016			
	Level 1	Level 2	Level 3	Fair Value
Cash equivalents	$ 37,672	$ —	$ —	$ 37,672
Derivative warrant liability	$ —	$ 2,695	$ —	$ 2,695

	At December 31, 2015			
	Level 1	Level 2	Level 3	Fair Value
Cash equivalents	$ 20,078	$ —	$ —	$ 20,078
Derivative warrant liability	$ —	$ 1,907	$ —	$ 1,907

5. COMMITMENTS AND CONTINGENCIES

Operating Lease Commitment

On November 29, 2011 and as amended on September 17, 2012, the Company entered into a commercial lease for 26,150 square feet of office, laboratory and manufacturing space (the "Facility") in Cambridge, Massachusetts (the "Cambridge Lease"). The term of the Cambridge Lease ends in October 2018 and includes one five-year extension option. The Cambridge Lease also requires a standby letter of credit in the amount of $311 (see Note 3).

The Cambridge Lease contains certain rent escalation clauses. The Company recognizes rent expense on a straight-line basis over the term of the Cambridge Lease and records the difference between the amount charged to expense and the rent paid as a deferred rent liability. As of September 30, 2016, the amount of deferred rent liability was $309.

Pursuant to the terms of the Cambridge Lease, which was non-cancelable and in effect at September 30, 2016, the Company's future minimum rent commitments are as follows (in thousands):

Year Ended December 31,	
2016	319
2017	1,289
2018	1,088
Total	$ 2,696

Total rent expense for the three months ended September 30, 2016 and 2015 was $210 and $297, respectively. Total rent expense for the nine months ended September 30, 2016 and 2015 was $707 and $891, respectively.

On March 31, 2016, the Company entered into a short-term sublease with CRISPR Therapeutics, as subtenant, to sub-lease 5,233 square feet of the Facility (the "Sublease"). The term of the Sublease is from April 1, 2016 through January 31, 2017. At the conclusion of the original Sublease term, the Sublease will move to a month-to-month arrangement with either party having the right to cancel upon 30 days notice. The Company received $154 through September 30, 2016 in connection with the Sublease, which was recorded as an offset to rent expense. The Company expects to receive non-cancelable rental income of $77 during the remainder of 2016 and $26 in 2017.

Compensation Commitment

The Company entered into a compensation arrangement with an executive during September 2016 which provides for a future cash payment by the Company to the executive based on the February 13, 2017 stock price of the executive's former employer. The award is earned over a period of one year. Accordingly, the expense related to the compensation arrangement was approximately $12 for the three and nine months ended September 30, 2016. The liability is included within accrued expenses on the balance sheet and will be recorded at fair value on a recurring basis until the final payment is determined on February 13, 2017.

Litigation

Lawsuits with Former Employee

In November 2013, the Company filed a lawsuit against Francis Reynolds, its former Chairman, Chief Executive Officer and Chief Financial Officer, in Middlesex Superior Court, Middlesex County, Massachusetts (InVivo Therapeutics Holdings Corp. v. Reynolds, Civil Action No. 13-5004). The complaint alleges breaches of fiduciary duties, breach of contract, conversion, misappropriation of corporate assets, unjust enrichment and corporate waste, and seeks monetary damages and an accounting. The lawsuit involves approximately $500 worth of personal and/or exorbitant expenses that the Company alleges Mr. Reynolds inappropriately caused it to pay while he was serving as the Company's Chief Executive Officer, Chief Financial Officer, President and Chairman of the Board of Directors. On December 6, 2013, Mr. Reynolds answered the complaint, and filed counterclaims against the Company and the Board of Directors. The counterclaims allege two counts of breach of contract, two counts of breach of the covenant of good faith and fair-dealing, and tortious interference with a contract, and seek monetary damages and a declaratory judgment. The counterclaims related to Mr. Reynolds's allegations that the Company and the Board of Directors interfered with the performance of his duties under the terms of his employment agreement, and that Mr. Reynolds was entitled to additional shares upon the exercise of certain stock options that he did not receive. On January 9, 2014, the Company, along with the directors named in the counterclaims, filed its answer. No judgments or rulings are pending at this stage.

On July 22, 2016, Mr. Reynolds filed a lawsuit against the Company, certain present and former members of the Company's Board of Directors and an employee of the Company in Hillsborough County Superior Court, Southern District, Hillsborough County, New Hampshire (*Reynolds v. InVivo Therapeutics Holdings Corp, et al.*) alleging defamation, conspiracy and tortious interference, and seeking monetary damages. In August 2016, the lawsuit was removed to the United States District Court for the District of New Hampshire. The Company has also filed a motion for dismissal, which is scheduled to be heard on November 20, 2016.

The Company intends to continue to defend itself against these claims and, to date, has not recorded any provision for losses that may arise.

Shareholder Matters and Investigations

On July 31, 2014, a putative securities class action lawsuit was filed in the United States District Court for the District of Massachusetts, naming the Company and Mr. Reynolds, as defendants (the "Securities Class Action"). The lawsuit alleges violations of the Securities Exchange Act of 1934 in connection with allegedly false and misleading statements related to the timing and completion of the clinical study of the Company's *Neuro-Spinal Scaffold*™ implant. The plaintiff sought class certification for purchasers of the Company's common stock during the period from April 5, 2013 through August 26, 2013 and unspecified damages. On April 3, 2015, the United States District Court for the District of Massachusetts dismissed the plaintiff's claim with prejudice.

On May 4, 2015, the plaintiff filed a notice of appeal of this decision. Following the submission of briefs by the parties, the Court of Appeals heard oral arguments on April 6, 2016 but has not yet rendered a decision.

On January 23, 2015, Shawn Luger, a purported shareholder of the Company, sent the Company a letter (the "Shareholder Demand") demanding that the Board of Directors take action to remedy purported breaches of fiduciary duties allegedly related to the claimed false and misleading statements that are the subject of the Securities Class Action. The Board of Directors completed its investigation of the matters raised in the

Shareholder Demand and voted unanimously not to pursue any litigation against any current or former director, officer or employee of the Company with respect to the matters set forth in the Shareholder Demand.

On August 14, 2015, Mr. Luger filed a shareholder derivative lawsuit in the Superior Court of Suffolk County for the Commonwealth of Massachusetts on behalf of the Company against certain present and former board members and company executives alleging the same breaches of fiduciary duties purportedly set forth in the Shareholder Demand. On February 5, 2016, the Superior Court of Suffolk County dismissed the plaintiff's claims with prejudice. On March 4, 2016, the plaintiff filed a notice of appeal of this decision. All of the parties' briefs regarding the appeal were submitted by July 29, 2016. The Appeals Court will hear oral arguments on December 13, 2016.

The Company intends to continue to defend itself against these claims and, to date, has not recorded any provision for losses that may arise.

In addition, the Company received investigation subpoenas from the Boston Regional Office of the SEC and the Massachusetts Securities Division of the Secretary of the Commonwealth of Massachusetts ("MSD") requesting corporate documents concerning, among other topics, the allegations raised by the Securities Class Action and the Shareholder Demand. On October 21, 2015, after responding to the SEC's subpoena, the Company received a letter from the SEC notifying the Company that it had concluded its investigation of the Company and that it did not intend to recommend an enforcement action against the Company. The Company responded to the MSD's subpoena on September 22, 2014 and October 8, 2014. On February 18, 2015, the Company received a second subpoena from the MSD requesting additional documents and information related to the same topics. The Company responded to this second subpoena on March 24, 2015. The Company has not further heard from the MSD since it responded to this last subpoena.

6. ACCRUED EXPENSES

Accrued expenses consisted of the following (in thousands):

	September 30, 2016	December 31, 2015
Accrued bonus	$ 829	$ —
Accrued payroll	225	85
Accrued vacation	255	81
Other accrued expenses	395	208
Total accrued expenses	$ 1,704	$ 374

7. LOAN PAYABLE

In October 2012, the Company entered into a loan agreement with the Massachusetts Development Finance Agency ("MassDev"). The loan agreement provided the Company with a $2,000 line of credit from the Massachusetts Emerging Technology Fund, with $200 designated to be used for working capital purposes and the remainder to be used for the purchase of capital equipment. The annual interest rate on the loan is fixed at 6.5% with interest-only payments for the first thirty months, commencing on November 1, 2012, and then equal interest and principal payments over the next fifty-four months, with the final maturity on October 5, 2019. Equal monthly principal payments of $41 became due commencing on May 1, 2015. Remaining principal payments for the years ending December 31, 2016, 2017, 2018 and 2019 are $101, $423, $452 and $400, respectively. The equipment line of credit is secured by substantially all the assets of the Company, excluding intellectual property. Interest expense related to this loan for the three months ended September 30, 2016 and 2015 was $24 and $32, respectively. Interest expense related to this loan for the nine months ended September 30, 2016 and 2015 was $76 and $97, respectively.

Also in October 2012, in connection with the loan agreement, the Company issued MassDev a warrant for the purchase of 9,037 shares of the Company's common stock. The warrant has a seven-year term and is exercisable at $6.64 per share. The fair value of the warrant was determined to be $32 and was recorded as a deferred financing cost and is being amortized to interest expense over a seven-year period which commenced in October 2012.

Amortization of the deferred financing cost for the three months and nine months ended September 30, 2016 was $1 and $3, respectively, and is included in interest expense in the Company's consolidated statements of operations.

8. COMMON STOCK

The Company has authorized 100,000,000 shares of common stock, $0.00001 par value per share, of which 32,033,197 shares were issued and outstanding as of September 30, 2016 and 27,555,948 shares were issued and outstanding as of December 31, 2015.

During the nine months ended September 30, 2016, the Company issued an aggregate of 135,205 shares of common stock upon the exercise of stock options and received cash proceeds of approximately $191.

During the nine months ended September 30, 2016, the Company issued an aggregate of 4,979 shares of common stock upon the cashless exercise of warrants.

During the nine months ended September 30, 2016, the Company issued an aggregate of 26,638 shares of common stock with a fair value of $156 to the Company's 401(k) plan as a matching contribution.

During the nine months ended September 30, 2016, the Company issued an aggregate of 16,729 shares of common stock under the Company's Employee Stock Purchase Plan and received cash proceeds of approximately $91.

In March 2016, the Company closed an underwritten public offering of an aggregate of 4,293,333 shares of common stock and warrants to purchase an aggregate of 2,146,666 shares of common stock, at a price to the public of $7.49 per share of common stock and $0.01 per warrant. The net proceeds to the Company, after deducting underwriting discounts and offering expenses, were approximately $29,905. The warrants have a per share exercise price of $10.00, or approximately 133% of the public offering price of the common stock, are exercisable immediately, and expire on March 18, 2021. The Company intends to use the net proceeds from the offering to fund ongoing clinical trials and for general corporate purposes.

During the year ended December 31, 2015, the Company issued an aggregate of 316,177 shares of common stock upon the exercise of stock options, including stock options to purchase 52,224 shares of common stock exercised through cashless exercise provisions, resulting in the issuance of 14,961 shares of common stock and stock options to purchase 301,216 shares of common stock exercised for cash, providing cash proceeds of $1,068.

During the year ended December 31, 2015, the Company issued an aggregate of 1,379,575 shares of common stock upon the exercise of warrants, including warrants to purchase 40,955 shares of common stock exercised through cashless exercise provisions, resulting in the issuance of 25,052 shares of common stock and warrants to purchase 1,354,523 shares of common stock exercised for cash, providing net cash proceeds of $7,789.

During the year ended December 31, 2015, the Company issued an aggregate of 17,437 shares of common stock with a fair value of $201 to the Company's 401(k) plan as a matching contribution.

In January 2015, the Company closed a registered direct offering of an aggregate of 2,000,000 shares of common stock, resulting in net proceeds of $11,038.

As part of the adjustment to reflect the Company's 1-for-4 reverse stock split on its common stock on April 8, 2015, 1,514 shares of common stock were issued to account for the fractional roundup of shareholders.

9. STOCK OPTIONS

In 2007, the Company's Board of Directors adopted, and the Company's shareholders subsequently approved, the 2007 Employee, Director and Consultant Stock Plan (the "2007 Plan"). Pursuant to the 2007 Plan, the Company's Board of Directors (or committees and/or executive officers delegated by the Board of Directors) may grant incentive and nonqualified stock options to the Company's employees, officers, directors, consultants and advisors.

On October 26, 2010, the Company's Board of Directors adopted, and the Company's shareholders subsequently approved, the 2010 Equity Incentive Plan (as subsequently amended, the "2010 Plan"). The 2010 Plan provided for grants of incentive stock options to employees and nonqualified stock options and restricted stock to employees, consultants and non-employee directors of the Company.

In April 2015, the Company's Board of Directors adopted, and the Company's shareholders subsequently approved, the 2015 Equity Incentive Plan (the "2015 Plan"). The 2015 Plan provides for grants of incentive stock options to employees and nonqualified stock, restricted stock, restricted stock units and stock appreciation rights to employees, consultants and non-employee directors of the Company. Upon approval of the 2015 Plan by the Company's shareholders in June 2015, the 2010 Plan was terminated and no additional shares or share awards have been subsequently granted under the 2010 Plan. As of September 30, 2016, the total number of shares authorized for issuance under the 2015 Plan was 4,322,355 shares, consisting of 4,000,000 initially approved under the 2015 Plan shares plus the 322,355 shares that remained available for grant under the 2010 Plan at the time of its termination.

Options issued under the 2007 Plan, the 2010 Plan, and the 2015 Plan (collectively, the "Plans") are exercisable for up to 10 years from the date of issuance. As of September 30, 2016, there were outstanding options to purchase an aggregate of 3,253,949 shares of common stock under the Plans, consisting of 150,207 shares under the 2007 Plan, 1,852,726 shares under the 2010 Plan and 1,251,016 shares under 2015 Plan. As of December 31, 2015, there were outstanding options to purchase an aggregate of 946,760, 2,065,687 and 240,863 shares of common stock under the 2015 Plan, 2010 Plan and 2007 Plan, respectively.

In March 2015, the Company's Board of Directors adopted, and the Company's shareholders subsequently approved, the Employee Stock Purchase Plan (the "ESPP"). The ESPP allows employees to buy company stock twice a year through after-tax payroll deductions at a discount from market. The Board of Directors initially authorized 187,500 shares for issuance under the ESPP. Commencing on the first day of 2016 and on the first day of each year thereafter during the term of the ESPP, the number of shares of common stock reserved for issuance were and shall be increased by the lesser of (i) 1% of the Company's outstanding shares of common stock on such date, (ii) 50,000 shares or (iii) a lesser amount determined by the Board of Directors. Under the terms of the ESPP, in no event shall the aggregate number of shares reserved for issuance during the term of the ESPP exceed 1,250,000 shares. On January 1, 2016, the reserve was increased by 50,000 shares in accordance with the ESPP increase provisions.

In January 2016, 6,948 shares that were purchased in the offering period commencing on July 1, 2015 and ending on December 31, 2015 were issued under the ESPP. In July 2016, 9,781 shares that were purchased in the offering period commencing on January 1, 2016 and ending on June 30, 2016 were issued under the ESPP. The ESPP is considered a compensatory plan with the related compensation cost recognized over each six-month offering period. As of September 30, 2016, $24 of employee payroll deductions have been withheld since July 1, 2016, the commencement of the current offering period, and are included in accrued expenses in the accompanying balance sheet. The compensation expense related to the ESPP for the three and nine months ended September 30, 2016 was $12 and $39, respectively, and is included in stock-based compensation expense.

Share-based compensation

For the three months ended September 30, 2016 and 2015, the Company recorded non-cash, stock-based compensation expense of approximately $1,187 and $1,372, respectively, net of forfeitures. For the nine months ended September 30, 2016 and 2015, the Company recorded non-cash, stock-based compensation expense of approximately $3,571 and $3,614, respectively, net of forfeitures. Stock-based compensation expense for the nine months ended September 30, 2016 includes $112 of expense related to a stock option modification.

The fair value of each option award is estimated on the date of grant using the Black-Scholes option pricing model. The Company uses historical data, as well as subsequent events occurring prior to the issuance of the financial statements, to estimate option exercises and employee terminations within the valuation model. The expected term of options granted under the Plans, all of which qualify as "plain vanilla," is based on the average of the contractual term (10 years) and the vesting period (generally, 48 months). For non-employee options, the expected term is the contractual term. The risk-free rate is based on the yield of a U.S. Treasury security with a term consistent with the option.

A summary of option activity as of September 30, 2016 and changes for the nine month period then ended are presented below:

Options	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term in Years	Aggregate Intrinsic Value
Outstanding at December 31, 2015	3,253,310	$ 7.47		
Granted	308,250	$ 6.44		
Forfeited	(172,406)	$ 9.55		
Exercised	(135,205)	$ 1.41		
Outstanding at September 30, 2016	3,253,949	$ 7.51	7.75	$ 2,413
Vested at September 30, 2016	1,498,267	$ 7.52	6.54	$ 1,712
Vested and expected to vest at September 30, 2016	2,676,307	$ 7.52	7.53	$ 2,165

The weighted average grant-date fair value of options granted during the nine months ended September 30, 2016 was $5.39 per share. The total fair value of options that vested for the three months ended September 30, 2016 was $1,012. The total fair value of options that vested for the nine months ended September 30, 2016 was $3,120. As of September 30, 2016, there was approximately $6,685 of total unrecognized compensation expense related to non-vested share-based option compensation arrangements. The unrecognized compensation expense is estimated to be recognized over a period of 2.57 years at September 30, 2016.

10. WARRANTS

The following table presents information about warrants to purchase common stock issued and outstanding at September 30, 2016:

Year Issued	Classification	Number of Warrants	Exercise Price	Date of Expiration
2010	Equity	343,931	$ 5.60	10/26/2017 - 12/3/2017
2010	Equity	306,838	$ 4.00	8/30/2017 - 12/3/2017
2011	Equity	85,785	$ 12.24	12/21/2016
2012	Equity	6,054	$ 6.64	10/5/2019
2014	Liability	587,950	$ 3.87	5/9/2019
2016	Equity	2,146,666	$ 10.00	3/18/2021
Total		3,477,224		
Weighted average exercise price			$ 8.05	
Weighted average life in years				3.41

In March 2016, the Company closed an underwritten public offering of an aggregate of 4,293,333 shares of common stock and warrants to purchase an aggregate of 2,146,666 shares of common stock, at a price to the public of $7.49 per share of common stock and $0.01 per warrant.

The warrants have an initial per share exercise price of $10.00 (133% of public offering price of the common stock) and will expire on March 18, 2021. The warrants are immediately exercisable, at the option of each holder, in whole or in part, in cash or through a cashless exercise as discussed below. The exercise price and number of shares of common stock issuable upon exercise of the warrants are subject to adjustment in the event of any stock split, reverse stock split, stock dividend, recapitalization, or similar transaction, among other events as described in the warrants. In the event that shares of common stock underlying the warrants are no longer registered under the Securities Exchange Act of 1934, as amended, the holder may, in its sole discretion, exercise the warrant in whole or in part and, in lieu of making cash payment, elect instead to receive upon such exercise the net number of shares of common stock determined according to the formula set forth in the warrant.

The fair value of the warrants was estimated at $11,726 using a Black-Scholes model with the following assumptions: expected volatility of 112.82%, risk free interest rate of 1.34%, expected life of five years and no dividends.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were (1) indexed to the Company's own stock and (2) classified in stockholders' equity in accordance with FASB Accounting Standards Codification ("ASC") Topic 815, *Derivatives and Hedging*. As such, the Company has concluded that the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should therefore instead be classified as stockholders' equity.

11. DERIVATIVE INSTRUMENTS

In May 2014, in connection with a public offering, the Company issued warrants that have anti-dilution protection provisions that allow for a reduction in the exercise price of the warrants if the Company subsequently issues equity securities, including common stock or any security convertible or exchangeable for shares of common stock, for no consideration or for consideration less than the exercise price of the warrants. Accordingly, these warrants are accounted for as derivative liabilities. The Company used the Binomial Lattice option pricing model and assumptions that consider, among other factors, the fair value of the underlying stock, risk-free interest rate, volatility, expected life and dividend rates in estimating fair value for the warrants considered to be derivative instruments. Changes in fair value of the derivative financial instruments are recognized in the Company's consolidated statement of operations as a derivative gain or loss. The warrant derivative gains (losses) are non-cash income (expenses); and for the three months ended September 30, 2016 and 2015 a (loss) gain of $(336) and $3,591, respectively, was included in other income (expense) in the Company's consolidated statement of operations. For the nine months ended September 30, 2016 and 2015 a loss of $(788) and $(11,349), respectively, was included in other income (expense) in the Company's consolidated statement of operations. The assumptions used principally in determining the fair value of the warrants were as follows:

	September 30, 2016	December 31, 2015
Risk free interest rate	0.90 %	0.65 %
Expected dividend yield	0.00 %	0.00 %
Expected term (in years)	2.61	3.36
Expected volatility	92.67 %	100.20 %

The primary underlying risk exposure pertaining to the warrants is the change in fair value of the underlying common stock for each reporting period.

Changes in the derivative warrant liability for the three and nine months ended September 30, 2016 and 2015 are as follows (in thousands):

	Three Months Ended September 30,	
	2016	2015
Balance at June 30,	$ 2,359	$ 7,722
Fair value of warrants issued	—	—
Reduction in derivative liability due to exercise and modification of warrants	—	(1,680)
Increase (decrease) in the fair value of warrants	336	(3,591)
Balance at September 30,	$ 2,695	$ 2,451

	Nine Months Ended September 30,	
	2016	2015
Balance at December 31,	$ 1,907	$ 7,224
Fair value of warrants issued	—	—
Reduction in derivative liability due to exercise and modification of warrants	—	(16,122)
Increase in the fair value of warrants	788	11,349
Balance at September 30,	$ 2,695	$ 2,451

The March 2016 public offering resulted in a repricing of the Company's liability-classified warrants. The liability-classified warrants' prices were decreased from $5.75 per share to $3.87 per share. In addition, the number of shares subject to the warrants increased from 395,716 to 587,950. The increase in the warrant liability for the three months ended September 30, 2016 was primarily driven by the increase in the fair value of the underlying stock price since June 30, 2016. The increase in the liability for the nine months ended September 30, 2016 was due to the issuance of additional shares underlying the warrants in connection with the repricing of liability-classified warrants, partially offset by the decrease in the fair value of the underlying stock price since December 31, 2015.

12. SUBSEQUENT EVENTS

The Company has evaluated all events and transactions that occurred after the balance sheet date through the date of this filing. During this period, the Company did not have any material subsequent events that impacted its financial statements or disclosures.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

The following management's discussion and analysis should be read in conjunction with the unaudited consolidated financial statements included elsewhere in this Quarterly Report and with our historical consolidated financial statements, and the related notes thereto, included in our Annual Report on Form 10-K for the year ended December 31, 2015 (the "2015 Annual Report"). The management's discussion and analysis contains forward-looking statements within the meaning of the safe harbor provisions under Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements include statements made regarding our commercialization strategy, future operations, cash requirements and liquidity, capital requirements and other statements on our business plans and strategy, financial position, and market trends. In some cases, you can identify forward-looking statements by terms such as "may," "might," "will," "should," "believe," "plan," "intend," "anticipate," "target," "estimate," "expect" and other similar expressions. These forward-looking statements are subject to risks and uncertainties that could cause actual results or events to differ materially from those expressed or implied by the forward-looking statements in this Quarterly Report, including factors such as our ability to raise substantial additional capital to finance our planned operations and to continue as a going concern, our ability to execute our strategy and business plan; the progress and timing of our development programs and regulatory approval for our products; the risk our research and development efforts do not lead to new products; the timing of commercializing our products; market acceptance of our products; our ability to retain management and other key personnel; and other factors detailed under "Risk Factors" in Item 1A of our 2015 Annual Report. These forward-looking statements speak only as of the date hereof. We do not undertake any obligation to update forward-looking statements to reflect events or circumstances occurring after the date of this Quarterly Report, except as required by law.

The discussion and analysis of our financial condition and results of operations are based on our financial statements, which we have prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenues and expenses during the reporting periods. On an ongoing basis, we evaluate such estimates and judgments, including those described in greater detail below. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Overview

We are a research and clinical-stage biomaterials and biotechnology company with a focus on treatment of spinal cord injuries ("SCI"). Our mission is to redefine the life of the SCI patient, and we are developing treatment options intended to provide meaningful improvement in patient outcomes following SCI. Our approach to treating acute SCI is based on our investigational *Neuro-Spinal Scaffold*™ implant, a bioresorbable polymer scaffold that is designed for implantation at the site of injury within a spinal cord contusion and is intended to treat acute spinal cord injury. We believe that the *Neuro-Spinal Scaffold* is the only SCI therapy in development focused solely on treating acute SCI directly at the epicenter of the injury. The *Neuro-Spinal Scaffold* incorporates intellectual property licensed under an exclusive, worldwide license from Boston Children's Hospital ("BCH") and the Massachusetts Institute of Technology ("MIT"). We are continually evaluating other technologies and therapeutics that may be complementary to our development of the *Neuro-Spinal Scaffold* or offer the potential to bring us closer to our goal of redefining the life of the SCI patient.

Our Clinical and Pre-Clinical Programs

We currently have a clinical development program for acute SCI and a pre-clinical development program for chronic SCI.

Neuro-Spinal Scaffold™ Implant for acute SCI

Our leading product under development is our *Neuro-Spinal Scaffold*, an investigational bioresorbable polymer scaffold that is designed for implantation at the site of injury within a spinal cord contusion. The *Neuro-Spinal Scaffold* is intended to provide support to the surrounding tissue after injury, minimizing expansion areas of necrosis, and

supporting endogenous healing/repair processes following injury. This form of appositional healing harbors the promise of sparing white matter, increasing neural sprouting, and diminishing post-traumatic cyst formation.

The *Neuro-Spinal Scaffold* is composed of two biocompatible and bioresorbable polymers that are cast to form a highly porous investigational product:

- Poly lactic-co-glycolic acid (PLGA), a polymer that is widely used in resorbable sutures and provides the biocompatible support for *Neuro-Spinal Scaffold*; and

- Poly-L-Lysine (PLL), a positively charged polymer commonly used to coat surfaces in order to promote cellular attachment.

We expect the *Neuro-Spinal Scaffold* will be regulated by the U.S. Food & Drug Administration ("FDA") as a Class III medical device when used as a standalone product.

In late 2015, we completed the early feasibility pilot cohort of the *Neuro-Spinal Scaffold* study under an approved Investigational Device Exemption application for the treatment of complete, traumatic acute spinal cord injury. The objective of the pilot study cohort was to establish the safety and feasibility of the *Neuro-Spinal Scaffold* for the treatment of complete functional spinal cord injury, as well as to gather preliminary evidence of the clinical effectiveness of the *Neuro-Spinal Scaffold*.

In January 2016, the FDA approved converting the pilot study of the *Neuro-Spinal Scaffold* into a pivotal probable benefit study formally known as The **INSPIRE** Study: **In**Vivo Study of Probable Benefit of the *Neuro-**Spi**nal Scaffold* for Safety and Neurologic **Re**covery in Subjects with Complete Thoracic AIS A Spinal Cord Injury. The purpose of the study is to evaluate whether the *Neuro-Spinal Scaffold* is safe and demonstrates probable benefit for the treatment of complete T2-T12/L1 spinal cord injury. The primary endpoint is defined as the proportion of patients achieving an improvement of at least one American Spinal Injury Association Impairment Scale ("AIS") grade by six months post-implantation. Additional endpoints include a reduction in pain and improvements in sensory and motor scores, bladder and bowel function, Spinal Cord Independence Measure and quality of life.

After review of the six-month pilot data package, the FDA approved The INSPIRE study to expand enrollment from 12 to up to 30 patients. There are currently 24 U.S. clinical sites and two Canadian clinical sites participating in The INSPIRE Study.

In February 2016, we received approval of a protocol amendment for The INSPIRE Study. The amended protocol established an Objective Performance Criterion ("OPC"). The study is currently structured to use the OPC as the measure of study success for demonstrating probable benefit in support of a Humanitarian Device Exemption ("HDE") approval. The OPC for The INSPIRE Study is defined as 25% or more of the patients in the study demonstrating an improvement of at least one AIS grade by six months post-implantation. Although the study is currently structured with the OPC as the primary component for demonstrating probable benefit, the OPC is not the only variable that the FDA would evaluate when reviewing a future HDE application. Approval is not guaranteed if the OPC is met, and even if the OPC is not met, the FDA may approve a therapy if probable benefit is supported by a comprehensive review of all clinical endpoints and preclinical results, as demonstrated by the sponsor's body of evidence. Since The INSPIRE Study is designed to enroll and successfully implant the *Neuro-Spinal Scaffold* in 20 patients with complete (AIS A) spinal cord injuries (inclusive of the five patients in the Company's pilot trial), the OPC equates to having five evaluable patients convert to any other AIS grade and have six months of post-implantation data available. However, the FDA has recommended that we include a randomized, concurrent control arm in the study as part of a study design consideration. We continue to believe that the current study design is sufficient to demonstrate safety and probable benefit in support of an HDE application for marketing approval, and we are in discussions with the FDA regarding their recommendation.

We are targeting completion of the study, as currently designed, including completion of enrollment, follow-up, and submission of the HDE application, in late 2017 or early 2018.

In late February 2016, the FDA accepted our proposed HDE modular shell submission and review process for the *Neuro-Spinal Scaffold*. The HDE modular shell is comprised of three modules, a preclinical studies module, a manufacturing module, and a clinical data module. As part of its review process, the FDA reviews modules, which are individual

sections of the HDE submission, on a rolling basis. Following the submission of each module, the FDA reviews and provides feedback, typically within 90 days, allowing the applicant to receive feedback and potentially resolve any deficiencies during the review process. Upon receipt of the final module, which constitutes the complete HDE submission, the FDA will make a filing decision which may trigger the review clock for an approval decision.

As of September 30, 2016, 10 patients have been enrolled into The INSPIRE Study, and five of the patients have improved from complete AIS A spinal cord injury to incomplete spinal cord injury (one patient to AIS C and four patients to AIS B) by the six-month post-injury assessment. There have been two patient deaths in The INSPIRE Study, neither of which was related to either the *Neuro-Spinal Scaffold* or the implant procedure.

Bioengineered Neural Trails™ injection program for chronic SCI

In December 2015, we announced our preclinical Bioengineered Neural Trails injection program for the treatment of chronic spinal cord injury. Bioengineered Neural Trails are injectable combinations of biomaterials and neural stem cells delivered using minimally-invasive surgical instrumentation and techniques to create trails across the chronic injury site. To support this program, we entered into an exclusive license agreement with the University of California, San Diego and an assignment agreement with James Guest, M.D., Ph.D., for issued patents covering technology related to the Bioengineered Neural Trails program, and we also have filed a provisional application in support of the Bioengineered Neural Trails injection program. We expect that our Bioengineered Neural Trails injection investigational product will be regulated by the FDA as a combination product, and we are targeting a pre-Investigational New Drug meeting with the FDA by the end of 2017.

Overall, we expect our research and development expenses to be substantial and to increase for the foreseeable future as we continue the development and clinical investigation of our current and future products. While we are currently focused on advancing the *Neuro-Spinal Scaffold* and the Bioengineered Neural Trails injection program, our research and development expenses will depend on the determinations we make as to the scientific and clinical prospects of each product candidate, as well as our ongoing assessment of the regulatory requirements and each product's commercial potential. In addition, we may make acquisitions of businesses, technologies or intellectual property rights that we believe would be necessary, useful or complementary to our current business. There can be no assurance that we will be able to successfully develop or acquire any product, or that we will be able to recover our development or acquisition costs, whether upon commercialization of a developed product or otherwise. We cannot provide assurance that any of our programs under development or any acquired technologies or products will result in products that can be marketed or marketed profitably. If our development-stage programs or any acquired products or technologies do not result in commercially viable products, our results of operations could be materially adversely affected.

We incorporated under the laws of the state of Nevada on April 2, 2003 as Design Source, Inc. On October 26, 2010, we acquired the business of InVivo Therapeutics Corporation, which was founded in 2005, and are continuing the existing business operations of InVivo Therapeutics Corporation as our wholly-owned subsidiary. We changed our name to InVivo Therapeutics Holdings Corp. in connection with the acquisition.

Critical Accounting Policies and Estimates

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period.

On an ongoing basis, we evaluate our estimates and judgments for all assets and liabilities, stock-based compensation expense and the fair value determined for stock purchase warrants classified as derivative liabilities. We base our estimates and judgments on historical experience, current economic and industry conditions and on various other factors that we believe to be reasonable under the circumstances. Such factors 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. There have been no changes in our critical accounting policies and estimates from the disclosure provided in our 2015 Annual Report.

We believe that full consideration has been given to all relevant circumstances that we may be subject to, and the consolidated financial statements accurately reflect our best estimate of the results of operations, financial position and cash flows for the periods presented.

Results of Operations

Comparison of the Three Months Ended September 30, 2016 and 2015 (in thousands)

Research and Development Expenses

Research and development expenses consisted primarily of payments to contract research organizations and payroll. Research and development expenses for the three months ended September 30, 2016 were $3,294, an increase of $862 compared to the three months ended September 30, 2015. The increase in research and development expenses for the three months ended September 30, 2016 is primarily attributed to clinical trial costs of $531 due to an increase in the number of patients in the INSPIRE trial and the opening of additional clinical trial sites. In addition, higher contract services costs of $136 and consulting costs of $124 contributed to the increase. Also contributing to the increase was higher stock compensation expense of $83, operating supplies of $34 and compensation-related expenses of $19. These increases were partly offset by a reduction in legal expenses of $58 and other expenses of $7.

General and Administrative Expenses

General and administrative expenses consisted primarily of payroll, rent and professional services. General and administrative expenses for the three months ended September 30, 2016 were $2,584, a decrease of $853 compared to the three months ended September 30, 2015. The decline in general and administrative expenses for the three months ended September 30, 2016 is attributed to reduced legal expenses of $554 and lower stock compensation costs of $279, consulting fees of $66, investor relations expenses of $51 and depreciation of $25. These decreases were partly offset by higher relocation costs of $103 and other expenses of $19.

Other Income and Expense

Other expense for the three months ended September 30, 2016 was $318, which was comprised of interest income of $50, interest expense of $32 and a derivative loss of $336. The three months ended September 30, 2016 reflected a decrease in income of $3,879 compared to the three months ended September 30, 2015, primarily related to the change in the derivative warrant liability of $3,927.

Comparison of the Nine Months Ended September 30, 2016 and 2015 (in thousands)

Research and Development Expenses

Research and development expenses consisted primarily of payments to contract research organizations and payroll. Research and development expenses for the nine months ended September 30, 2016 were $8,659, an increase of $1,379 compared to the nine months ended September 30, 2015. The increase in research and development expenses for the nine months ended September 30, 2016 is primarily attributed to higher clinical trial costs of $752 due to an increase in the number of patients in the INSPIRE trial and the opening of additional clinical trial sites. In addition, higher contract services costs of $401 and compensation-related expense of $280 contributed to this increase. These increases were partly offset by a reduction in recruiting costs of $33 and other various expenses of $21.

General and Administrative Expenses

General and administrative expenses consisted primarily of payroll, rent and professional services. General and administrative expenses for the nine months ended September 30, 2016 were $8,573, a decrease of $1,288 compared to the nine months ended September 30, 2015. The decline in general and administrative expenses for the nine months ended September 30, 2016 is attributed to reduced legal expenses of $1,882. This decline was offset by higher compensation-related expenses of $244, conventions costs of $182, insurance costs of $88, consulting fees of $75 and other expenses of $5.

Other Income and Expense

Other expense for the nine months ended September 30, 2016 was $772, which was comprised of interest income of $133, interest expense of $117 and a derivative loss of $788. The nine months ended September 30, 2016 reflected a decrease in expense of $10,668 compared to the nine months ended September 30, 2015, primarily related to the change in the derivative warrant liability of $10,561.

Liquidity and Capital Resources *(in thousands)*

Since inception, we have devoted substantially all of our efforts to business planning, research and development, recruiting management and technical staff, acquiring operating assets and raising capital. At September 30, 2016, we had total assets of $39,480 and total liabilities of $6,640, resulting in stockholders' equity of $32,840. We also recorded a net loss of $18,004 for the nine months ended September 30, 2016.

We have historically financed our operations primarily through the sale of equity securities. In March 2016, we closed an underwritten public offering of an aggregate of 4,293,333 shares of common stock and warrants to purchase an aggregate of 2,146,666 shares of common stock, at a price to the public of $7.49 per share of common stock and $0.01 per warrant. The underwriting discount was 6% of the public offering price of the shares, or $0.45 per share and 0.0006 per warrant. The warrants have an initial per share exercise price of $10.00 (133% of public offering price of the common stock) and will expire on March 18, 2021.

We believe our current cash and cash equivalents are adequate to fund our operations through the end of 2017. At September 30, 2016, we had cash and cash equivalents of approximately $37,665.

Net cash used in operating activities for the nine months ended September 30, 2016 was $12,326, as compared to net cash used in operating activities of $10,973 for the nine months ended September 30, 2015. The change in net cash used in operating activities for the nine months ended September 30, 2016 as compared to the same period in the prior year was primarily due to an insurance settlement received in the first quarter of 2015 as well as a change in prepaid expenses. We also have significant commitments that will require the use of cash in operating activities in future periods, including our obligations under current operating leases. Our committed lease obligations amount to $2,696. Total commitments due for the remainder of fiscal year 2016 under operating leases are $319.

Net cash used in investing activities for the nine months ended September 30, 2016 and 2015 totaled $96 and $2, respectively, for purchases of capital equipment.

Net cash provided by financing activities was $29,893 for the nine months ended September 30, 2016 primarily consisting of the proceeds from our March 2016 offering and stock option exercises of $191, partly offset by loan repayments of $294. This compares to net cash provided by financing activities of $19,662 for the nine months ended September 30, 2015, which was primarily related to proceeds from our January 2015 offering and from warrant and stock option exercises.

In July 2015, we entered into a Sales Agreement (the "Sales Agreement") with Cowen and Company, LLC ("Cowen") pursuant to which we may issue and sell from time to time shares of Common Stock having aggregate sales proceeds of up to $50 million through an "at the market" equity offering program under which Cowen agreed to act as our sales agent. We did not make any sales under the Sales Agreement in 2016 and the Sales Agreement was terminated in March 2016.

We intend to pursue opportunities to obtain additional financing in the future through equity and/or debt financings. We have filed with the SEC, and the SEC declared effective, a universal shelf registration statement which permits us to issue up to $150 million worth of registered equity securities. Under this effective shelf registration, we have the flexibility to issue registered securities, from time to time, in one or more separate offerings or other transactions with the size, price and terms to be determined at the time of issuance. Registered securities issued using this shelf registration statement may be used to raise additional capital to fund our working capital and other corporate needs, for future acquisitions of assets, programs or businesses, and for other corporate purposes.

We may pursue various other dilutive and non-dilutive funding alternatives upon the results of our ongoing pivotal probable benefit study and the extent to which we require additional capital to proceed with development of some or all

of our product candidates on expected timelines. The source, timing and availability of any future financing will depend principally upon market conditions and the status of our clinical development programs. Funding may not be available when needed, at all, or on terms acceptable to us. Lack of necessary funds may require us, among other things, to delay, scale back or eliminate some or all of our research and product development programs, planned clinical trials, and our capital expenditures or to license our potential products or technologies to third parties.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future material effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We are exposed to market risk related to change in interest rates which could affect our operating results, financial position and cash flows. We manage our exposure to these market risks through our regular operating and financing activities. We do not use derivative financial instruments for speculative or trading purposes. For discussion of our market risk exposure, refer to Item 7A, “Quantitative and Qualitative Disclosures About Market Risk,” in our 2015 Annual Report. As of September 30, 2016 there were no material changes in exposure to market risk from December 31, 2015.

Item 4. Controls and Procedures.

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Exchange Act) as of September 30, 2016. Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures as of September 30, 2016 were effective in ensuring that information required to be disclosed by us in reports that we file or submit under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and (ii) accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting that occurred during the quarter ended September 30, 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

Lawsuits with Former Employee

In November 2013, we filed a lawsuit against Francis Reynolds, our former Chairman, Chief Executive Officer and Chief Financial Officer, in Middlesex Superior Court, Middlesex County, Massachusetts (*InVivo Therapeutics Holdings Corp. v. Reynolds, Civil Action No. 13-5004*). The complaint alleges breaches of fiduciary duties, breach of contract, conversion, misappropriation of corporate assets, unjust enrichment, and corporate waste and seeks monetary damages and an accounting. The lawsuit involves approximately $500 worth of personal and/or exorbitant expenses that we allege Mr. Reynolds inappropriately caused us to pay while he was serving as our Chief Executive Officer, Chief Financial Officer, President and Chairman of our Board of Directors. On December 6, 2013, Mr. Reynolds answered the complaint, and filed counterclaims against us and our Board of Directors. The counterclaims allege two counts of breach of contract, two counts of breach of the covenant of good faith and fair-dealing, and tortious interference with a contract, and seek monetary damages and a declaratory judgment. The counterclaims related to Mr. Reynolds's allegations that we and the Board of Directors interfered with the performance of his duties under the terms of his employment agreement, and that Mr. Reynolds was entitled to additional shares upon the exercise of certain stock options that he did not receive. On January 9, 2014, we, along with the directors named in the counterclaims, filed our answer. No judgments or rulings are pending at this stage.

On July 22, 2016, Mr. Reynolds filed a lawsuit against us, certain present and former members of our Board of Directors and an employee of ours in Hillsborough County Superior Court, Southern District, Hillsborough County, New Hampshire (*Reynolds v. InVivo Therapeutics Holdings Corp, et al.*) alleging defamation, conspiracy and tortious interference, and seeking monetary damages. In August 2016, the lawsuit was removed to the United States District Court for the District of New Hampshire. We have also filed a motion for dismissal, which is scheduled to be heard on November 20, 2016.

We intend to continue to defend ourselves against these claims and, to date, we have not recorded any provision for losses that may arise.

Shareholder Matters and Investigations

On July 31, 2014, a putative securities class action lawsuit was filed in the United States District Court for the District of Massachusetts, naming us and Mr. Reynolds, as defendants (the "Securities Class Action"). The lawsuit alleges violations of the Securities Exchange Act of 1934 in connection with allegedly false and misleading statements related to the timing and completion of the clinical study of our *Neuro-Spinal Scaffold*™ implant. The plaintiff sought class certification for purchasers of our common stock during the period from April 5, 2013 through August 26, 2013 and unspecified damages. On April 3, 2015, the United States District Court for the District of Massachusetts dismissed the plaintiff's claim with prejudice.

On May 4, 2015, the plaintiff filed a notice of appeal of this decision. Following the submission of briefs by the parties, the Court of Appeals heard oral arguments on April 6, 2016 but has not yet rendered a decision.

On January 23, 2015, Shawn Luger, a purported shareholder of ours, sent us a letter (the "Shareholder Demand") demanding that the Board of Directors take action to remedy purported breaches of fiduciary duties allegedly related to the claimed false and misleading statements that are the subject of the Securities Class Action. The Board of Directors completed its investigation of the matters raised in the Shareholder Demand and voted unanimously not to pursue any litigation against any current or former director, officer or employee of ours with respect to the matters set forth in the Shareholder Demand.

On August 14, 2015, Mr. Luger filed a shareholder derivative lawsuit in the Superior Court of Suffolk County for the Commonwealth of Massachusetts on our behalf against certain present and former board members and company executives alleging the same breaches of fiduciary duties purportedly set forth in the Shareholder Demand. On February 5, 2016, the Superior Court of Suffolk County dismissed the plaintiff's claims with prejudice. On March 4, 2016, the plaintiff filed a notice of appeal of this decision. All of the parties' briefs regarding the appeal were submitted by July 29, 2016. The Appeals Court will hear oral arguments on December 13, 2016.

We intend to continue to defend ourselves against these claims and, to date, we have not recorded any provision for losses that may arise.

In addition, we received investigation subpoenas from the Boston Regional Office of the SEC and the Massachusetts Securities Division of the Secretary of the Commonwealth of Massachusetts ("MSD") requesting corporate documents concerning, among other topics, the allegations raised by the Securities Class Action and the Shareholder Demand. On October 21, 2015, after responding to the SEC's subpoena, we received a letter from the SEC notifying us that it had concluded its investigation of us and that it did not intend to recommend an enforcement action against us. We responded to the MSD's subpoena on September 22, 2014 and October 8, 2014. On February 18, 2015, we received a second subpoena from the MSD requesting additional documents and information related to the same topics. We responded to this second subpoena on March 24, 2015. We have not further heard from the MSD since it responded to this last subpoena.

Item 1A. Risk Factors.

There have been no material changes in the risk factors previously disclosed in Part I, Item 1A, "Risk Factors" of our 2015 Annual Report.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

Recent Sales of Unregistered Securities

On August 10, 2016, one of our investors exercised a warrant covering 7,221 shares of common stock via cashless exercise, and we issued 2,759 shares of common stock as a result of such exercise. The issuance of these securities was made in reliance on the exemption from the registration requirements of the Securities Act of 1933, as amended (the "Securities Act") set forth in Regulation D promulgated under the Securities Act or in Section 4(a)(2) of the Securities Act as a transaction by an issuer not involving a public offering. The investor represented that he was an accredited investor and was acquiring the securities for his own account for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof and that he could bear the risks of the investment and could hold the securities for an indefinite period of time. Appropriate legends were affixed to the instruments representing such securities issued.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

The Exhibits listed in the Exhibit Index immediately preceding such Exhibits are filed with or incorporated by reference in this Quarterly Report on Form 10-Q.

SIGNATURES

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

INVIVO THERAPEUTICS HOLDINGS CORP.

Date: November 4, 2016

By: /s/ Steven F. McAllister
Name: Steven F. McAllister
Title: Chief Financial Officer
(Principal Financial Officer)

EXHIBIT INDEX

Exhibit Number	Description
10.1	Employment Agreement, dated as of August 10, 2016, between the Company and Pamela Stahl.
31.1	Certification of the Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of the Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of the Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Label Linkbase Document
101.PRE	XBRL Taxonomy Presentation Linkbase Document

Exhibit 10.1

EMPLOYMENT AGREEMENT

This EMPLOYMENT AGREEMENT (the "Agreement"), dated as of August 10, 2016 (the "Effective Date"), is made between InVivo Therapeutics Holdings Corp. (the "Company") a corporation duly organized and validly existing under the laws of the State of Nevada having a business address of One Kendall Square, Building 1400 East, Floor 4, Cambridge, MA 02139, and Pamela Stahl (the "Executive"). an individual having an address at 1313 N. Franklin Place #705, Milwaukee, WI 53202.

WITNESSETH THAT:

WHEREAS, the parties desire to enter into this Agreement pertaining to the employment of the Executive by the Company:

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth below, it is hereby covenanted and agreed by the Executive and the Company as follows:

1. Performance of Services. The Executive's employment with the Company shall be subject to the following:

(a) Subject to the terms of this Agreement, the Company hereby agrees to employ the Executive as its Chief Commercial Officer. The Executive shall also serve as Chief Commercial Officer of InVivo Therapeutics Corporation, the Company's wholly-owned subsidiary. The Executive shall be based at the Company's headquarters in Cambridge, MA.

(b) While the Executive is employed by the Company, the Executive shall devote her business time, energies and talents to serving as its Chief Commercial Officer. The Executive may, however, serve on outside boards of directors, to the extent that such activities do not materially inhibit or prohibit the performance of the Executive's duties under this Agreement or conflict in any material way with the business of the Company or any subsidiary.

(c) The Executive shall serve as a Section 16 officer of the Company subject to the various regulatory filing responsibilities that must be met by directors, officers and principal stockholders as required by this section of the Securities and Exchange Act of 1934, as amended, and the related rules and regulations of the Securities and Exchange Commission.

(d) The Executive agrees that she shall perform her duties faithfully and efficiently subject to the directions of the Chief Executive Officer ("CEO") and the Board of Directors of the Company (the "Board"). The Executive shall not, without her consent, be assigned tasks that would be inconsistent with those of the Chief Commercial Officer. The Executive shall report to the CEO and shall have such authority, power, responsibilities and duties as are inherent in her position (and the undertakings applicable to her position) and necessary to carry out her responsibilities and the duties required of her hereunder.

(e) The Executive's employment with the Company is "at-will," which means that either the Executive or the Company may terminate the Executive's employment at any time, for any reason, or for no reason, by providing notice thereof to the other party, subject to the terms of this Agreement. The Executive acknowledges that the Agreement does not constitute a contract of employment for any particular period of time or impose on the Company any obligation to retain the Executive as an employee. If the Executive's employment with the Company terminates for any reason, the Executive shall be deemed to have resigned, effective as of the date of such termination, as an officer or director of any subsidiary of the Company, and the Executive hereby agrees to promptly execute resignation letters documenting such resignations upon the request of the Company.

(f) The Executive agrees to abide by the rules, regulations, instructions, personnel practices and policies of the Company and any changes therein which may be adopted from time to time by the Company.

2. Compensation. Subject to the terms of this Agreement, while the Executive is employed by the Company, the Company shall compensate her for her services as follows:

(a) Salary. The Company shall pay to the Executive a salary at the annual rate of $335,000 paid in accordance with the Company's usual payroll practices. This salary will be reviewed annually by the Compensation Committee of the Board and may be adjusted upward (but not downward without the Executive's consent) in the sole discretion of the Compensation Committee of the Board.

(b) Bonus. The Executive shall be eligible to receive an annual bonus of 35% of her annual salary, subject to her performance of specified objectives to be established by the CEO in collaboration with the Executive each year. Actual bonus payout may be below or above the annual target bonus subject to performance. The Executive will be eligible to receive a bonus for 2016 of $117,250; provided, however, if the Executive's employment with the Company terminates by reason of election by the Executive for other than for Good Reason (as defined below) or termination for Cause (as defined below) by the Company before the first anniversary of the Executive's Start Date (as defined in Section 3), the Company will be entitled to recover from the Executive, and Executive agrees to pay back to the Company, the prorated portion of the bonus representing the number of days that the Executive was short of being employed for 365 days. (*E.g.*, If Executive's employment is from September 15, 2016 to July 31, 2017, she will have been employed for 320 of 365 days, leaving her 45 days short of 365. Consequently, the Company would be entitled to recover $14,455 representing the prorated portion of the bonus for the 45-day shortfall.)

For the purposes of this Agreement, "Good Reason" for termination by election of the Executive shall mean (i) a material adverse change in the Executive's authority, duties or compensation without the prior consent of the Executive, or (ii) a material breach by the Company of the terms of this Agreement, which breach is not remedied by the Company within 10 days following written notice from the Executive to the Company notifying it of

such breach. “Cause” shall mean (i) a good faith finding by the Company that (A) the Executive has failed to perform her reasonably assigned duties for the Company and has failed to remedy such failure within 10 days following written notice from the Company to the Executive notifying her of such failure, (B) the Executive has engaged in dishonesty, gross negligence or misconduct, or (C) the Executive’s conviction, or the entry of a pleading of guilty or nolo contendere by the Executive to, any crime involving moral turpitude or any felony.

(c) Equity Awards. The Executive shall be granted the option to purchase up to that certain number of shares of the Company’s common stock equivalent to $1,123,450 in Black-Scholes value of the Company’s common stock at an exercise price equal to the closing price of a share of the Company’s common stock priced at market value on the Start Date (the “Initial Grant”). On the one year anniversary of the Start Date, 25% of the Initial Grant shall become vested. Thereafter, the Initial Grant shall vest in 36 equal installments on each monthly anniversary of the Start Date until fully vested 48 months from the Start Date. The Executive shall also be eligible to receive other equity awards through participation in the Company’s equity incentive programs, as determined in the sole discretion of the Board (or a designated committee thereof).

(d) Equity Awards Buyout. The Executive shall be eligible to receive a cash payment for the value of the United Health Care (NYSE: UNH) restricted stock units and stock options that she will forfeit upon employment with the Company which would have vested from her prior employer, United Health Care, on February 6-12, 2017. The Company will calculate the amount of the cash payment based on the value of 788.728 restricted stock units and the in-the-money value of the 3003 stock options using the closing price of United Health Care (NYSE: UNH) common stock on Monday, February 13, 2017. The Company will make the cash payment to the Executive based on these calculations; provided, however, if the Executive’s employment with the Company terminates by reason of election by the Executive for other than for Good Reason or termination for Cause by the Company before the first anniversary of the Executive’s Start Date (as defined in Section 3), the Company will be entitled to recover from the Executive, and Executive agrees to pay back to the Company, the prorated portion of the equity awards buyout representing the number of days that the Executive was short of being employed for 365 days.

(e) Housing Reimbursement. The Executive shall be eligible to receive a one-time UHC housing reimbursement payment of $25,180; provided, however, if the Executive’s employment with the Company terminates by reason of election by the Executive for other than for Good Reason or termination for Cause by the Company before the second anniversary of her Start Date, the Company will be entitled to recover from the Executive, and Executive agrees to pay back to the Company, the prorated portion of the UHC housing reimbursement representing the number of days that the Executive was short of being employed for 730 days.

(f) Reimbursement of Relocation and Temporary Living Expenses. The Executive shall be eligible to receive reimbursement for relocation, Milwaukee condominium sale, temporary living and travel expenses in connection with her relocation to Massachusetts. The Company has estimated these expenses to be up to $60,000, and the Company will cover tax gross-up expenses at the applicable federal, state and FICA rates; provided, however, if the Executive's employment with the Company terminates by reason of election by the Executive for other than for Good Reason or termination for Cause by the Company before the second anniversary of her Start Date, the Company will be entitled to recover from the Executive, and Executive agrees to pay back to the Company, the prorated portion of reimbursements (and gross-up payments) representing the number of days that the Executive was short of being employed for 730 days.

(g) Other Benefits. The Executive shall be eligible for all medical, dental and other benefits and fringe benefits to the same extent and on the same terms as those benefits are provided by the Company from time to time to the Company's other senior management members, including paid vacation. In addition, the Company shall provide parking privileges at or near the Company's headquarters.

(h) Expense Reimbursement. The Company will reimburse the Executive for all reasonable travel, entertainment and other expenses incurred or paid by the Executive in connection with, or related to, the performance of her duties, responsibilities or services under this Agreement, provided that such expenses are incurred and accounted for in accordance with the reasonable policies and procedures established by the Company.

(i) Withholding. All salary, bonus and other compensation payable to the Executive shall be subject to applicable withholding taxes.

(j) Indemnification and Insurance.

(i) The Company and the Executive, contemporaneously with the execution of this Agreement, shall execute the Company's standard Indemnification Agreement.

(ii) The Company shall maintain directors and officers liability insurance in commercially reasonably amounts (as reasonably determined by the Board), and the Executive shall be covered under such insurance to the same extent as other senior management members.

3. Term and Termination. The Company and the Executive agree that the Executive's employment with the Company is scheduled to begin on or about September 15, 2016 with the actual first day of her employment being defined herein as the "Start Date." The Executive's employment with the Company pursuant to this Agreement shall terminate upon the occurrence of any of the following:

(a) At the election of the Company for Cause immediately upon written notice by the Company to the Executive which notice shall identify the Cause upon which the termination is based;

(b) Upon the death or permanent disability of the Executive, if such disability renders the Executive incapable of performing her duties, as reasonably determined by the Company, and the Executive is considered disabled within the meaning of the relevant U.S. Treasury regulations;

(c) At the election of either party upon not less than 10 days' prior written notice of termination; or

(d) At the election of the Executive for Good Reason immediately upon written notice by the Executive to the Company which notice shall identify the Good Reason upon which the termination is based.

4. Rights Upon Termination. Upon the Date of Termination (as defined below), the Company shall provide to the Executive the following:

(a) Accrued Obligations. The Company will pay the Executive her Accrued Obligations promptly following the Date of Termination. For purposes of this Agreement, "Date of Termination" means the last day the Executive is employed by the Company pursuant to this Agreement, and "Accrued Obligations" means (i) the portion of the Executive's salary as has accrued prior to any termination of her employment with the Company and has not yet been paid, (ii) an amount equal to the value of any accrued unused vacation days or paid time off, (iii) the amount of any annual bonus declared but not yet paid and (iv) the amount of any expenses properly incurred by the Executive on behalf of the Company prior to any such termination and not yet reimbursed pursuant to Section 2(e) hereof.

(b) Severance.

(i) If the Executive's employment is terminated without Cause by the Company under Section 3(c) or by the Executive for Good Reason under Section 3(d) in the absence of a Change in Control (as defined in the Company's 2015 Equity Incentive Plan, the Company shall (A) continue to pay the Executive her base salary as in effect on the Date of Termination, paid in accordance with the Company's usual payroll practices, for a period of 12 months following the Date of Termination and (B) if the Executive is participating in the Company's employee group health insurance plans on the Date of Termination, continue such benefits for a period of 6 months following the Date of Termination.

(ii) If the Executive's employment is terminated without Cause by the Company under Section 3(c) or by the Executive for Good Reason under Section 3(d) within the twelve month period following a Change in Control, the Company shall (A) pay the Executive an amount equal to 1.5 times her base salary as in effect on the Date of Termination plus 100% of her target annual bonus, (B) accelerate in full the vesting on all outstanding, unvested equity awards held by the Executive and (C) if the Executive is participating in the Company's employee group health insurance plans on the Date of Termination, continue such benefits for a period of 12 months following the Date of Termination.

(iii) The payment to the Executive of the amounts payable under this Section 4(b) shall (A) be contingent upon the execution by the Executive of a release in a form reasonably acceptable to the Company and (B) constitute the sole remedy of the

Executive in the event of a termination of the Executive's employment in the circumstances set forth in this Section 4(b).

(c) COBRA. The Executive and any of her dependents shall be eligible for COBRA continuation coverage (as described in section 4980B of the Internal Revenue Code of 1986, as amended (the "Code")) at the Executive's own cost to the extent permitted by applicable law.

(d) Other Benefits. The Company shall provide any other payments or benefits to be provided to the Executive by the Company or a subsidiary pursuant to any Executive benefit plans or arrangements established or adopted by the Company or a subsidiary (including, without limitation, any rights to indemnification from the Company (or from a third-party insurer for directors and officers liability coverage) under Section 2(g) or otherwise with respect to any costs, losses, claims, suits, proceedings, damages or liabilities to which the Executive may become subject which arise out of, are based upon or relate to the Executive's employment by the Company), to the extent such amounts are due from the Company in accordance with the terms of this Agreement or such plans or arrangements.

5. Proprietary Information.

(a) The Executive agrees that all information, whether or not in writing, of a private, secret or confidential nature concerning the Company's business, business relationships or financial affairs (collectively, "Proprietary Information") is and shall be the exclusive property of the Company. Without limitation, Proprietary Information shall include inventions, products, processes, methods, techniques, formulas, compositions, compounds, projects, development plans, research data, clinical data, confidential communications with regulatory bodies and other third parties, financial data, personnel data, computer programs, customer and supplier lists, and contacts with or knowledge of customers or prospective customers of the Company. The Executive will not disclose any Proprietary Information to any person or entity other than employees of the Company with authorization to access the information or use the same for any purposes (other than in the performance of her duties as an Executive of the Company) during or after her employment with the Company, unless and until such Proprietary Information has become public knowledge without fault of the Executive or such disclosure is required by law.

(b) The Executive agrees that all files, letters, memoranda, reports, records, data, sketches, drawings, laboratory notebooks, program listings, or other written, photographic, electronic, or other tangible material containing Proprietary Information, in any form, whether created by the Executive or others, which shall come into her custody or possession, shall be the exclusive property of the Company and will be used by the Executive only in the performance of her duties for the Company. All such materials or copies thereof and all tangible property of the Company in the custody or possession of the Executive shall be delivered to the Company, upon the earlier of (i) a request by the Company or (ii) the Date of Termination of her employment. After such delivery, the Executive shall not retain any such materials or copies thereof or any such tangible property.

(c) The Executive agrees that her obligation not to disclose or to use information and materials of the types set forth in Sections 5(a) and 5(b), and her obligation to return materials and tangible property, set forth in Section 5(b), also extends to such types of information, materials and tangible property of customers of the Company

or suppliers to the Company or other third parties, including licensors and licensees, who may have disclosed or entrusted the same to the Company or to the Executive.

6. Inventions.

(a) The Executive will make full and prompt disclosure to the Company of all inventions, improvements, discoveries, methods, developments, software, and works of authorship, whether patentable or not, which are created, made, conceived or reduced to practice by her, or under her direction, or jointly with others, during her employment by the Company, whether or not during normal working hours or on the premises of the Company (all of which are collectively referred to in this Agreement as "Inventions").

(b) The Executive agrees to assign and does hereby assign to the Company (or any person or entity designated by the Company) all of her right, title and interest in and to all Inventions and related patents, patent applications, trade secrets, copyrights and copyright applications. However, this Section 6(b) shall not apply to Inventions which are unrelated to the present or planned business or research and development of the Company and which are made and conceived by the Executive outside of normal working hours, outside the Company's premises and do not involve use of the Company's tools, devices, equipment or Proprietary Information. The Executive understands that, to the extent this Agreement is to be construed in accordance with the laws of any state which precludes a requirement in an Executive agreement to assign certain classes of inventions made by an Executive, this Section 6(b) shall be interpreted to not apply to any invention which a court rules and/or the Company agrees to fall within such classes.

(c) The Executive agrees to cooperate fully with the Company, both during and after her employment with the Company, with respect to the procurement, maintenance and enforcement of patents, trademarks, copyrights and other intellectual property rights (both in the United States and foreign countries) relating to Inventions. The Executive shall sign all papers, including, without limitation, copyright applications, patent applications, declarations, oaths, formal assignments, assignments of priority rights, and powers of attorney, which the Company may deem necessary or desirable in order to protect its rights and interests in any Invention. The Executive further agrees that if the Company is unable to secure the signature of the Executive on any such papers with reasonable effort, an executive officer of the Company shall be entitled to execute any such papers as the agent and the attorney-in-fact of the Executive, and the Executive hereby irrevocably designates and appoints each executive officer of the Company as her agent and attorney-in-fact to execute any such papers on her behalf, and to take any and all actions as the Company may deem necessary or desirable in order to protect its rights and interests in any Invention, under the conditions described herein.

7. Remedies. The Executive agrees and acknowledges that her breach of Section 5 or Section 6 cannot be reasonably or adequately compensated for in money damages alone and would cause irreparable injury to the Company. Accordingly, the Executive agrees that, with respect to a breach of such Sections, the Company is entitled to, in addition to all other rights and remedies available to the Company at law or in equity, specific performance and immediate injunctive relief, without posting a bond.

8. Non-Compete and Non-Solicitation.

(a) Restricted Activities. While the Executive is employed by the Company and for a period of one year after the termination or cessation of such employment for any reason, the Executive will not directly or indirectly:

(i) engage in any business or enterprise (whether as owner, partner, officer, director, employee, consultant, investor, lender or otherwise, except as the holder of not more than 1% of the outstanding stock of a publicly-held company) that develops, manufactures, markets, licenses, sells or provides any product or service that competes with any product or service developed, manufactured, marketed, licensed, sold or provided, or planned to be developed, manufactured, marketed, licensed, sold or provided by the Company while the Executive was employed by the Company; or

(ii) either alone or in association with others (A) solicit, or permit any organization directly or indirectly controlled by the Executive to solicit, any employee of the Company to leave the employ of the Company, or (B) solicit for employment, hire or engage as an independent contractor, or permit any organization directly or indirectly controlled by the Executive to solicit for employment, hire or engage as an independent contractor, any person who was employed by the Company at any time during the last six months term of the Executive's employment with the Company.

(b) Extension. If the Executive violates the provisions of Section 8(a), the Executive shall continue to be bound by the restrictions set forth in Section 8(a) until a period of one year has expired without any violation of such provisions.

(c) Interpretation. If any restriction set forth in Section 8(a) is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

(d) Equitable Remedies. The restrictions contained in this Section 8 are necessary for the protection of the business and goodwill of the Company and are considered by the Executive to be reasonable for such purpose. The Executive agrees that any breach of this Section 8 is likely to cause the Company substantial and irrevocable damage which is difficult to measure. Therefore, in the event of any such breach or threatened breach, the Executive agrees that the Company, in addition to such other remedies which may be available, shall have the right to obtain an injunction from a court restraining such a breach or threatened breach and the right to specific performance of the provisions of this Section 8 and the Executive hereby waives the adequacy of a remedy at law as a defense to such relief.

9. Compliance with Section 409A.

(a) General. It is the intention of both the Company and the Executive that the benefits and rights to which the Executive could be entitled pursuant to this Agreement comply with Section 409A of the Code and the Treasury Regulations and other guidance promulgated or issued thereunder ("Section 409A"), to the extent that the requirements of Section 409A

are applicable thereto, and the provisions of this Agreement shall be construed in a manner consistent with that intention. If the Executive or the Company believes, at any time, that any such benefit or right that is subject to Section 409A does not so comply, it shall promptly advise the other and shall negotiate reasonably and in good faith to amend the timing of such benefits and rights such that they comply with Section 409A (with the most limited possible economic effect on the Executive).

(b) Distributions on Account of Separation from Service. If and to the extent required to comply with Section 409A, no payment or benefit required to be paid under this Agreement on account of termination of the Executive's employment shall be made unless and until the Executive incurs a "separation from service" within the meaning of Section 409A.

(c) 6 Month Delay for "Specified Employees".

(i) If the Executive is a "specified employee," then no payment or benefit that is payable on account of the Executive's "separation from service," as that term is defined for purposes of Section 409A, shall be made before the date that is six months after the Executive's "separation from service" (or, if earlier, the date of the Executive's death) if and to the extent that such payment or benefit constitutes deferred compensation (or may be nonqualified deferred compensation) under Section 409A and such deferral is required to comply with the requirements of Section 409A. Any payment or benefit delayed by reason of the prior sentence shall be paid out or provided in a single lump sum at the end of such required delay period in order to catch up to the original payment schedule. There shall be added to any payments that are delayed pursuant to this provision interest at the prime rate as reported in the Wall Street Journal for the date of the Executive's separation from service. Such interest shall be calculated from the date on which the payment otherwise would have been made until the date on which the payment is made.

(ii) For purposes of this provision, the Executive shall be considered to be a "specified employee" if, at the time of her separation from service, the Executive is a "key employee" (within the meaning of Section 416(i) of the Code) of the Company (or any person or entity with whom the Company would be considered a single employer under Section 414(b) or Section 414(c) of the Code) any stock in which is publicly traded on an established securities market or otherwise.

(d) No Acceleration of Payments. Neither the Company nor the Executive, individually or in combination, may accelerate any payment or benefit that is subject to Section 409A, except in compliance with Section 409A and the provisions of this Agreement, and no amount that is subject to Section 409A shall be paid prior to the earliest date on which it may be paid without violating Section 409A.

(e) Treatment of Each Installment as a Separate Payment. For purposes of applying the provisions of Section 409A to this Agreement, each separately identified amount to which the Executive is entitled under this Agreement shall be treated as a separate payment. In addition, to the extent permissible under Section 409A, any series of installment payments under this Agreement shall be treated as a right to a series of separate payments.

(f) Taxable Reimbursements.

(i) Any reimbursements by the Company to the Executive of any eligible expenses under this Agreement that are not excludable from the Executive's income for Federal income tax purposes (the "Taxable Reimbursements") shall be made by no later than the earlier of the date on which they would be paid under the Company's normal policies and the last day of the taxable year of the Executive following the year in which the expense was incurred.

(ii) The amount of any Taxable Reimbursements to be provided to the Executive during any taxable year of the Executive shall not affect the expenses eligible for reimbursement to be provided in any other taxable year of the Executive.

(iii) The right to Taxable Reimbursements shall not be subject to liquidation or exchange for another benefit.

10. Survival. The Executive agrees that her obligations under Sections 5, 6, 8 and 9 of this Agreement shall survive the termination of her employment, regardless of the reason for such termination.

11. Acknowledgement. The Executive acknowledges and agrees that the Company does not desire her to use any confidential information of any prior employer during her employment hereunder and that the Company will not ask for nor will it accept any such confidential information. This acknowledgement shall not reduce or otherwise affect the Executive's rights to indemnification from the Company.

12. Severability. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement.

13. Governing Law. This Agreement shall be governed by and construed and enforced in accordance with the internal laws of the Commonwealth of Massachusetts. Both parties agree to exclusive venue in the state (Middlesex County) or federal courts located in the Commonwealth of Massachusetts.

14. Successors and Assigns. This Agreement is personal to the Executive and without the prior written consent of the Company shall not be assignable by the Executive otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns.

15. Entire Agreement. This Agreement, with the Indemnification Agreement, contains the entire agreement of the parties and supersedes any prior understandings or agreements between the Executive and the Company. This Agreement may be changed only by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought.

16. Counterparts. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original, but both of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have executed this Employment Agreement as of the Effective Date.

Company

InVivo Therapeutics Holdings Corp.

By: /s/ Mark D. Perrin
Name: Mark D. Perrin
Title: Chief Executive Officer

Executive

Pamela Stahl

/s/ Pamela Stahl

Exhibit 31.1

SARBANES-OXLEY SECTION 302(a) CERTIFICATION

I, Mark D. Perrin, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of InVivo Therapeutics Holdings Corp.;

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 (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 4, 2016

/s/ Mark D. Perrin
Mark D. Perrin
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

SARBANES-OXLEY SECTION 302(a) CERTIFICATION

I, Steven F. McAllister, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of InVivo Therapeutics Holdings Corp.;

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 (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 4, 2016

/s/ Steven F. McAllister
Steven F. McAllister
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of InVivo Therapeutics Holdings Corp. (the "Company") for the quarter ended September 30, 2016, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Mark D. Perrin, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) 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.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Date: November 4, 2016

/s/ Mark D. Perrin
Mark D. Perrin
Chief Executive Officer

Exhibit 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of InVivo Therapeutics Holdings Corp. (the "Company") for the quarter ended September 30, 2016, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Steven F. McAllister, and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) 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.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Date: November 4, 2016

/s/ Steven F. McAllister
Steven F. McAllister
Chief Financial Officer