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

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2018

or

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

Commission File Number 001-35443

ARGOS THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware **(State or other jurisdiction of incorporation or organization)**	**56-2110007** **(I.R.S. Employer Identification No.)**
4233 Technology Drive **Durham, North Carolina** **(Address of principal executive offices)**	**27704** **(Zip Code)**

Registrant's telephone number, including area code: (919) 287-6300

No changes
(Former name, former address and former fiscal year, if changed since last report)

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 every Interactive Data File required to be submitted 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 such files). Yes ☒ No ☐

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

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

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

As of November 17, 2018, there were 10,586,661 shares outstanding of the registrant's common stock, par value $0.001 per share.

ARGOS THERAPEUTICS, INC.
QUARTERLY REPORT ON FORM 10-Q
For the Quarterly Period Ended September 30, 2018

TABLE OF CONTENTS

Unless otherwise indicated, all information in this Quarterly Report on Form 10-Q gives effect to a 1-for-20 reverse stock split of Argos's outstanding common stock that became effective on January 18, 2018.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

ARGOS THERAPEUTICS, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS
(unaudited)

	December 31, 2017	September 30, 2018
Assets		
Current assets		
Cash and cash equivalents	$ 15,188,838	$ 7,940,790
Assets held for sale	600,000	—
Prepaid expenses	1,252,134	1,044,157
Other receivables	143,449	56,751
Total current assets	17,184,421	9,041,698
Property and equipment, net	3,582,323	1,828,182
Other assets	11,020	11,020
Total assets	$ 20,777,764	$ 10,880,900
Liabilities and Stockholders' Deficit		
Current liabilities		
Accounts payable	$ 970,650	$ 327,001
Accrued expenses	1,263,867	2,519,088
Notes payable	4,972,649	4,983,494
Current portion of other convertible notes	2,350,000	1,540,000
Total current liabilities	9,557,166	9,369,583
Convertible note payable to related party	6,302,959	6,744,420
Long-term portion of other convertible notes	5,830,583	5,218,776
Deferred liabilities	8,153,500	2,121,000
Warrants	167,636	—
Commitments	—	—
Stockholders' deficit		
Preferred stock $0.001 par value; 5,000,000 shares authorized as of December 31, 2017 and September 30, 2018; 0 shares issued and outstanding as of December 31, 2017 and September 30, 2018	—	—
Common stock $0.001 par value; 200,000,000 shares authorized as of December 31, 2017 and September 30, 2018; 5,906,620 and 10,586,661 shares issued and outstanding as of December 31, 2017 and September 30, 2018	5,907	10,587
Accumulated other comprehensive loss	(125,864)	(129,045)
Additional paid-in capital	363,450,204	373,700,536
Accumulated deficit	(372,564,327)	(386,154,957)
Total stockholders' deficit	(9,234,080)	(12,572,879)
Total liabilities and stockholders' deficit	$ 20,777,764	$ 10,880,900

The accompanying notes are an integral part of these condensed consolidated financial statements.

ARGOS THERAPEUTICS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2018	2017	2018
Revenue	$ 53,497	$ 1,247,254	$ 228,449	$ 7,234,434
Operating expenses				
Research and development	4,550,353	3,324,591	17,585,134	12,794,036
General and administrative	2,879,011	3,015,182	9,521,769	8,009,830
Impairment of property and equipment	—	—	27,204,349	—
Restructuring costs	679,013	—	6,031,779	—
Total operating expenses	8,108,377	6,339,773	60,343,031	20,803,866
Operating loss	(8,054,880)	(5,092,519)	(60,114,582)	(13,569,432)
Other income (expense)				
Interest income	11,027	24,173	50,485	62,143
Interest expense	(67,211)	(165,699)	(1,089,971)	(466,614)
Gain on early extinguishment of debt	1,506,901	281,808	1,756,359	281,808
Change in fair value of warrant liability	501,870	—	20,681,631	167,636
Other income (expense)	36,346	(48,410)	31,441	(66,172)
Other income (expense), net	1,988,933	91,872	21,429,945	(21,199)
Net loss	$ (6,065,947)	$ (5,000,647)	$ (38,684,637)	$ (13,590,631)
Net loss per share, basic and diluted	$ (2.08)	$ (0.47)	$ (16.45)	$ (1.41)
Weighted average common shares outstanding, basic and diluted	2,911,800	10,586,661	2,351,839	9,607,577

The accompanying notes are an integral part of these condensed consolidated financial statements.

ARGOS THERAPEUTICS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2018	2017	2018
Net loss	$ (6,065,947)	$ (5,000,647)	$ (38,684,637)	$ (13,590,631)
Other comprehensive gain (loss)				
Foreign currency translation gain (loss)	5,341	2,345	9,294	(3,181)
Total comprehensive loss	$ (6,060,606)	$ (4,998,302)	$ (38,675,343)	$ (13,593,812)

The accompanying notes are an integral part of these condensed consolidated financial statements.

ARGOS THERAPEUTICS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)

	Nine Months Ended September 30,	
	2017	**2018**
Cash flows from operating activities		
Net loss	$ (38,684,637)	$ (13,590,631)
Adjustments to reconcile net loss to net cash used in operating activities		
Depreciation and amortization	733,172	1,657,719
Compensation expense related to stock options	7,047,234	1,970,481
Issuance of common shares for research and development license agreement	—	360,000
Gain on early extinguishment of debt	(1,756,359)	(281,808)
Impairment loss on property and equipment	27,204,349	—
Decrease in fair value of warrant liability	(20,681,631)	(167,636)
(Gain) loss on disposal of equipment	(22,998)	66,172
Interest accrued on long-term debt	512,336	466,131
Changes in operating assets and liabilities:		
Prepaid expenses and other receivables	(402,827)	294,674
Accounts payable	(2,368,676)	(643,649)
Accrued expenses	(2,751,011)	1,255,220
Current portion of restructuring obligation	150,103	—
Deferred liabilities	(82,500)	(6,032,500)
Manufacturing research and development obligation	(409,680)	—
Net cash used in operating activities	(31,513,125)	(14,645,827)
Cash flows from investing activities		
Purchase of property and equipment	(3,674,358)	—
Proceeds from sale of property and equipment	1,461,078	630,204
Net cash (used in) provided by investing activities	(2,213,280)	630,204
Cash flows from financing activities		
Net proceeds from sale of common stock	7,790,622	7,924,534
Proceeds from issuance of convertible note payable	6,000,000	—
Payments on notes payable	(23,643,786)	(1,153,825)
Payments on capital lease obligations	(42,085)	—
Proceeds from exercise of employee stock purchase plan shares	11,756	—
Net cash (used in) provided by financing activities	(9,883,493)	6,770,709
Effect of exchange rate changes on cash	9,164	(3,134)
Net decrease in cash and cash equivalents	(43,600,734)	(7,248,048)
Cash, cash equivalents and restricted cash		
Beginning of period	53,713,376	15,188,838
End of period	$ 10,112,642	$ 7,940,790
Supplemental disclosure of cash flow information		
Cash paid for interest	$ 667,553	$ 578
Supplemental disclosure of noncash investing and financing activities		
Issuance of warrants in exchange for early extinguishment of debt	$ 87,100	$ —
Purchase of property and equipment included in accounts payable and accrued expenses	$ 2,470,119	$ —

The accompanying notes are an integral part of these condensed consolidated financial statements.

1. Organization and Basis of Presentation

Argos Therapeutics, Inc. (the "Company"), was incorporated in the State of Delaware on May 8, 1997. The Company is an immuno-oncology company that has been focused on the development and commercialization of individualized immunotherapies for the treatment of cancer and infectious diseases based on its proprietary precision immunotherapy technology platform called Arcelis.

In April 2018 the Company terminated its development program for rocapuldencel-T, its lead product candidate, which the Company had been developing for the treatment of metastatic renal cell carcinoma, or mRCC, and other cancers. Additionally, in August 2018, the Company ceased its support for the development of its other clinical product candidate, AGS-004, which it was developing for the eradication of HIV. The Company has ceased its research and development activities and has significantly reduced its workforce. Based on a review of the status of its internal programs, resources and capabilities, the Company is pursuing a strategic alternative that may involve an asset sale, dissolution, liquidation, wind-down or protection under bankruptcy laws. There can be no assurance that the Company will be able to enter into a strategic transaction on a timely basis, on terms that are favorable to the Company, or at all. If the Company decides to seek protection under the bankruptcy laws, and if the Company decides to wind down under the bankruptcy laws or otherwise, it is unclear to what extent the Company will be able to pay its obligations to creditors, and, whether and to what extent any resources will be available for distributions to the Company's stockholders. However, based on the Company's current resources, the Company believes that it is unlikely that any resources will be available for distributions to its stockholders and that a likely outcome of the Company's wind-down and potential bankruptcy proceeding will be the cancellation or extinguishment of all outstanding shares in the Company without any payment or other distribution on account of those shares.

Prior to April 2018, the Company had been conducting a pivotal Phase 3 clinical trial of rocapuldencel-T in combination with sunitinib / standard of care for the treatment of newly diagnosed mRCC ("the ADAPT trial"). In February 2017, the independent data monitoring committee ("IDMC"), for the ADAPT trial recommended that the trial be discontinued for futility based on its planned interim data analysis. The IDMC concluded that the trial was unlikely to demonstrate a statistically significant improvement in overall survival in the combination treatment arm, utilizing the intent-to-treat population at the pre-specified number of 290 events (deaths), the original primary endpoint of the study. Notwithstanding the IDMC's recommendation, the Company determined to continue to conduct the trial while it analyzed interim data from the trial. Following a meeting with the U.S. Food and Drug Administration (the "FDA"), the Company determined to continue the ADAPT trial until at least the pre-specified number of 290 events occurred, and to submit to the FDA a protocol amendment to increase the pre-specified number of events for the primary analysis of overall survival in the trial beyond 290 events. In April 2018, the Company submitted a protocol amendment to the FDA that included an amended primary endpoint analysis with four co-primary endpoints. Subsequently in April 2018, the Company conducted another interim analysis of the data from the ADAPT trial, at which time 51 new events (deaths) had occurred subsequent to the February 2017 interim analysis. Based upon review of the interim data from this analysis, the Company determined that it was unlikely to achieve the endpoints if the trial were to be continued and decided to discontinue the ADAPT clinical trial.

The Company had also been developing AGS-004, also an Arcelis-based product candidate, for the treatment of HIV. The Company has completed Phase 1 and Phase 2 trials funded by government grants and a Phase 2b trial that was funded in full by the National Institutes of Health ("NIH") and the National Institute of Allergy and Infectious Diseases ("NIAID"). More recently, the Company was supporting an investigator-initiated clinical trial of AGS-004 in adult HIV patients evaluating the use of AGS-004 in combination with vorinostat, a latency reversing drug, for HIV eradication. In connection with the cessation of its research and development activities, the Company recently ceased its support for the trial, and enrollment was suspended.

Basis of Presentation and Going Concern

The accompanying unaudited condensed consolidated financial statements have been prepared by the Company in accordance with U.S. generally accepted accounting principles ("U.S. GAAP") and with the rules and regulations of the Securities and Exchange Commission ("SEC") for interim financial information. The year-end condensed consolidated balance sheet data was derived from audited financial statements, but does not include all disclosures required by U.S. GAAP. Accordingly, the statements do not include all information and footnotes required by U.S. GAAP for annual consolidated financial statements. In the opinion of management, such interim financial statements reflect all adjustments (consisting of normal recurring adjustments) considered necessary for a fair statement of financial position, results of operations and cash flows for such periods. The results for the three and nine months ended September 30, 2018 are not necessarily indicative of the results that may be expected for the year ended December 31, 2018 or future operating periods. The information included in these interim financial statements should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this Quarterly Report on Form 10-Q and the consolidated financial statements and footnotes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

The Company's consolidated financial statements have been prepared assuming that the Company will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The Company has evaluated principal conditions and events that may raise substantial doubt about its ability to continue as a going concern within one year from the date that these financial statements are issued. The Company has incurred losses in each year since inception and as of September 30, 2018, had an accumulated deficit of $386.2 million. Also, as of September 30, 2018, the Company's current assets totaled $9.0 million compared with current liabilities of $9.4 million, and the Company had cash and cash equivalents of $7.9 million. Based upon its current and projected cash flow, the Company concluded there is substantial doubt about its ability to continue as a going concern within one year from the date that these financial statements are issued. The financial statements for the three and nine months ended September 30, 2018 do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from uncertainty related to the Company's ability to continue as a going concern.

On March 3, 2017, the Company entered into a payoff letter with Horizon Technology Finance Corporation and Fortress Credit Co LLC (the "Lenders") under a venture loan and security agreement (the "Loan Agreement") pursuant to which the Company paid, on March 6, 2017, a total of $23.1 million to the Lenders, representing the principal balance and accrued interest outstanding under the Loan Agreement in repayment of the Company's outstanding obligations under the Loan Agreement. In addition, the Company issued to the Lenders five year warrants to purchase an aggregate of 5,000 shares of common stock at an exercise price of $26.00 per share in consideration of the Lenders acceptance of $23.1 million as payment in full. Upon the payment of the $23.1 million and the issuance of the warrants pursuant to the payoff letter, all of the Company's outstanding indebtedness and obligations to the Lenders under the Loan Agreement were paid in full, and the Loan Agreement and the notes thereunder were terminated.

In March 2017, the Company announced that its board of directors approved a workforce action plan designed to streamline operations and reduce operating expenses. The Company recognized $1.2 million in severance costs, all of which was paid as of December 31, 2017. The Company also recognized $3.2 million in stock-based compensation expense from the acceleration of vesting of stock options and restricted stock held by the terminated employees during the year ended December 31, 2017.

In June 2017, the Company raised net proceeds of $6.0 million through the issuance of a secured convertible note to Pharmstandard International S.A. ("Pharmstandard"), a collaborator and the Company's largest stockholder, in the aggregate principal amount of $6.0 million.

In August 2017, the Company entered into an agreement with Medpace, Inc. ("Medpace"), regarding $1.5 million in deferred fees that the Company owed Medpace for contract research and development services. Under the agreement, the Company paid $0.85 million of the amount during the third of quarter 2017 and paid the balance in April 2018.

In September 2017, the Company entered into a satisfaction and release agreement (the "Satisfaction and Release Agreement") with Invetech Pty Ltd ("Invetech"). Under the Invetech Satisfaction and Release Agreement, the Company agreed to make, issue and deliver to Invetech (i) a cash payment of $0.5 million, (ii) 57,142 shares of common stock and (iii) an unsecured convertible promissory note in the original principal amount of $5.2 million, on account of and in full satisfaction and release of all of the Company's payment obligations to Invetech arising under the Company's development agreement with Invetech (the "Invetech Development Agreement") prior to the date of the Invetech Satisfaction and Release Agreement, including the Company's obligation to pay Invetech up to a total of $8.3 million in deferred fees, bonus payments and accrued interest.

In November 2017, the Company entered into a satisfaction and release agreement (the "Saint-Gobain Satisfaction and Release Agreement") with Saint-Gobain Performance Plastics Corporation ("Saint-Gobain"). Under the Saint-Gobain Satisfaction and Release Agreement, the Company agreed to make, issue and deliver to Saint-Gobain (i) a cash payment of $0.5 million, (ii) 34,499 shares of common stock, (iii) an unsecured convertible promissory note in the original principal amount of $2.4 million, and (iv) certain specified equipment originally provided to the Company by Saint-Gobain under the development agreement with Saint-Gobain, or the ("Saint-Gobain Development Agreement"), on account of and in full satisfaction and release of all of the Company's payment obligations to Saint-Gobain arising under the Saint-Gobain Development Agreement, prior to the date of the Saint-Gobain Satisfaction and Release Agreement, including the development fees and charges. In connection with entering into the Saint-Gobain Satisfaction and Release Agreement, the Company and Saint-Gobain entered into an amendment to the Saint-Gobain Development Agreement to extend the term to December 31, 2019.

From June 2017 through December 31, 2017, the Company raised proceeds of $15.5 million through the issuance of common stock in an at-the-market offering under its sales agreement with Cowen & Company, LLC ("Cowen"). From December 31, 2017 through April 25, 2018, an additional $7.5 million of proceeds was raised. However, upon the delisting of its common stock from The Nasdaq Capital Market in April 2018, the Company ceased to sell any additional shares under the sales agreement.

On April 23, 2018, the Company received a notification from The Nasdaq Stock Market LLC indicating that, because the Company had indicated that it would be unable to meet the stockholders' equity requirement for continued listing as of the April 24, 2018 deadline that had been set by the Nasdaq Hearing Panel, the Nasdaq Hearing Panel had determined to delist the Company's common stock from The Nasdaq Capital Market and to suspend trading in its common stock effective at the open of business on April 25, 2018. Following such delisting, the Company transferred its common stock to the OTCQB® Venture Market.

As of September 30, 2018, the Company had cash and cash equivalents of $7.9 million. The Company does not currently have sufficient cash resources to pay all of its accrued obligations in full or to continue its business operations beyond the end of 2018.

In light of the termination of the development of rocapuldencel-T, cessation of the Company's research and development activities and the Company's cash resources, and based on a review of the status of its internal programs, resources and capabilities, the Company is pursuing a strategic alternative that may involve an asset sale, dissolution, liquidation, wind-down or protection under the bankruptcy laws. There can be no assurance that the Company will be able to enter into a strategic transaction on a timely basis, on terms that are favorable to the Company, or at all. If the Company decides to seek protection under the bankruptcy laws, and if the Company decides to wind down under the bankruptcy laws or otherwise, it is unclear to what extent the Company will be able to pay its obligations to creditors, and, whether and to what extent any resources will be available for distributions to the Company's stockholders. However, based on the Company's current resources, the Company believes that it is unlikely that any resources will be available for distributions to its stockholders and that a likely outcome of the Company's wind-down and potential bankruptcy proceeding will be the cancellation or extinguishment of all outstanding shares in the Company without any payment or other distribution on account of those shares.

The condensed consolidated financial statements include the accounts of the Company and DC Bio Corp., the Company's Canadian wholly-owned subsidiary, an unlimited liability corporation incorporated in the Province of Nova Scotia and Argos Therapeutics (Europe) S.à.r.l., the Company's wholly-owned subsidiary, a société anonyme à responsabilité limitée incorporated in Luxembourg. Significant intercompany transactions and accounts have been eliminated.

On January 18, 2018, the Company effected a one-for-twenty reverse split of its common stock. All references to shares of common stock outstanding, average number of shares outstanding and per share amounts in these consolidated financial statements and notes to consolidated financial statements have been restated to reflect the reverse split on a retroactive basis.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Significant Accounting Policies

There have been no material changes in our significant accounting policies as of and for the three and nine months ended September 30, 2018, as compared with the significant accounting policies described in our Annual Report on Form 10-K for the year ended December 31, 2017, except as described below under Revenue Recognition and Recently Adopted Accounting Standards.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original maturity of three months or less as of the date of purchase to be cash equivalents. Cash deposits are all in financial institutions in the United States of America, Canada and the European Union. The Company maintains cash in accounts which are in excess of federally insured limits. As of December 31, 2017 and September 30, 2018, $14.7 million and $7.7 million, respectively, in cash and cash equivalents was uninsured.

Revenue Recognition

An important part of the Company's business strategy has been to enter into arrangements with third parties both to assist in the development and commercialization of its product candidates, particularly in international markets, and to in-license product candidates in order to expand its pipeline. The terms of the agreements typically include non-refundable license fees, funding of research and development, payments based upon achievement of clinical development and regulatory objectives, and royalties on product sales. The Company has adopted the provisions of the Financial Accounting Standards Board ("FASB"), Codification Topic 606, Revenue from Contracts with Customers ("Topic 606"). This guidance supersedes the provisions of FASB Codification Topic 605, Revenue Recognition ("Topic 605").

Effective January 1, 2018, the Company adopted ASC 606, using the modified retrospective transition method. Under this method, results for reporting periods beginning after January 1, 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with Topic 605. The Company applied the modified retrospective transition method to contracts that were not completed as of January 1, 2018, the effective date of adoption for ASC 606. The contracts to which the Company is a party that were not completed as of January 1, 2018 are the multi-year research contract with the NIH and NIAID (see Note 10) and the collaboration agreements included in Note 11. The Company assessed the potential effects to the consolidated financial statements and retained earnings of adoption of the modified retrospective transition method and has concluded that, upon adoption of the new standard, there was no impact on the Company's consolidated financial statements and there was no difference in what would have been recognized under Topic 605 or Topic 606 for the three and nine months ended September 30, 2018.

License Fees and Multiple Element Arrangements. If a license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenues from non-refundable, up-front fees allocated to the license at such time as the license is transferred to the licensee and the licensee is able to use, and benefit from, the license. For licenses that are bundled with other promises, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. The Company evaluates the measure of progress in each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

If the Company is involved in a steering committee as part of a multiple element arrangement, the Company assesses whether its involvement constitutes a performance obligation or a right to participate. Steering committee services that are determined to be performance obligations are combined with other research services or performance obligations required under an arrangement, if any, in determining the level of effort required in an arrangement and the period over which the Company expects to complete its aggregate performance obligations.

If the Company cannot reasonably measure its progress toward complete satisfaction of a performance obligation because it lacks reliable information that would be required to apply an appropriate method of measuring progress, but the Company can reasonably estimate when the performance obligation ceases or the remaining obligations become inconsequential and perfunctory, then revenue is not recognized until the Company can reasonably estimate when the performance obligation ceases or becomes inconsequential. Revenue is then recognized over the remaining estimated period of performance.

Significant management judgment is required in determining the level of effort required under an arrangement and the period over which the Company is expected to complete its performance obligations under an arrangement.

Development Milestone Payments. At the inception of each arrangement that includes development milestone payments, the Company evaluates whether the milestones are considered probable of being achieved and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The Company evaluates factors such as the scientific, clinical, regulatory, commercial, and other risks that must be overcome to achieve the particular milestone. There is considerable judgment involved in determining whether it is probable that a significant revenue reversal would not occur. At the end of each subsequent reporting period, the Company reevaluates the probability of achievement of all milestones subject to constraint and, if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

Reimbursement of Costs. Reimbursement of research and development costs by third party collaborators is recognized as revenue over time provided the Company has determined that it transfers control (i.e. performs the services) of a service over time and, therefore, satisfies a performance obligation according to the provisions outlined in the FASB Codification Topic 606-10-25-27, Revenue Recognition.

Royalty Revenue. For arrangements that include sales-based royalties, including milestone payments based on a level of sales, which are the result of a customer-vendor relationship and for which the license is deemed to be the predominant item to which the royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied or partially satisfied. To date, the Company has not recognized any royalty revenue resulting from any of its collaboration agreements.

Deferred Revenue. Amounts received prior to satisfying the above revenue recognition criteria are recorded as deferred revenue in the accompanying condensed consolidated balance sheets. Short-term deferred revenue would consist of amounts that are expected to be recognized as revenue within the next fiscal year. Amounts that the Company expects will not be recognized in the next fiscal year would be classified as long-term deferred revenue.

Summary. During the three and nine months ended September 30, 2017, the Company recognized $26,000 and $146,000, respectively, of contract revenue under the Company's contract with the NIH and NIAID and $27,500 and $82,500, respectively, of deferred revenue as revenue under the Company's license agreement with Lummy (Hong Kong) Co. Ltd. ("Lummy HK"). During the three months ended September 30, 2018, the Company recognized $70,000 of contract revenue under the contract with the NIH and NIAID and $1.1 million of deferred revenue as revenue under the Lummy HK license agreement. During the nine months ended September 30, 2018, the Company recognized $6.0 million of deferred milestone revenue as revenue under the Company's license agreement with Medinet Co., Ltd and its wholly-owned subsidiary, MEDcell Co., Ltd. (together "Medinet"), $1.1 million of deferred revenue as revenue and $14,000 in reimbursement of costs under the Lummy HK license agreement, $127,000 of contract revenue under its contract with the NIH and NIAID and $11,000 of grant revenue.

For additional discussion of accounting for collaboration revenues, see Note 11.

With respect to each of the foregoing areas of revenue recognition, the Company exercises significant judgment in determining whether an arrangement contains multiple elements, and, if so, how much revenue is allocable to each element. In addition, the Company exercises its judgment in determining when its significant obligations have been met under such agreements and the specific time periods over which it recognized revenue, such as non-refundable, up-front license fees. To the extent that actual facts and circumstances differ from the Company's initial judgments, revenue recognition with respect to such transactions would change accordingly and any such change could affect the Company's reported financial results.

Recently Issued Accounting Pronouncements Not Yet Adopted

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)* ("ASU 2016-02"). The provisions of ASU 2016-02 set out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract (i.e. lessees and lessors). This new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. Leases with a term of 12 months or less will be accounted using guidance similar to existing guidance for operating leases. Topic 842 supersedes the previous lease standard, Topic 840 *Leases*. This guidance will be effective for annual periods and interim periods within those annual periods beginning after December 15, 2018, and will be effective for the Company on January 1, 2019. The Company is currently evaluating the impact that the implementation of this standard will have on the Company's consolidated financial statements.

On August 17, 2018, the SEC adopted the final rule under SEC Release No. 33-10532, "*Disclosure Update and Simplification*" amending certain disclosure requirements that were redundant, duplicative, overlapping, outdated or superseded. In addition, the amendments expanded the disclosure requirements on the analysis of stockholders' equity for interim financial statements. Under the amendments, an analysis of changes in each caption of stockholders' equity presented in the balance sheet must be provided in a note or separate statement. The analysis should present a reconciliation of the beginning balance to the ending balance of each period for which a statement of comprehensive income is required to be filed. The new rule was published in the Federal Register on October 4, 2018 which means the changes in the new rule are effective for SEC filings made on or after November 5, 2018. The one caveat to this effective date is for the addition to changes in shareholders' equity information to Form 10-Q, where the SEC issued a Compliance & Disclosure Interpretation indicating "the staff would not object if the filer's first presentation of the changes in shareholders' equity is included in its Form 10-Q for the quarter that begins after the effective date of the amendments." Accordingly, the changes in stockholders' equity is not required to be presented until the Company's Form 10-Q for the three months ended March 31, 2019.

Recently Adopted Accounting Standards

In May 2014, the FASB issued Accounting Standards Update ("ASU") 2014-09*, Revenue from Contracts with Customers ("ASU 2014-09")* pertaining to revenue recognition. The primary objective of ASU 2014-09 is for entities to recognize revenue to depict the transfer of goods or services to customers in amounts that reflect the consideration to which an entity expects to be entitled to in exchange for those goods or services. This new standard also requires enhanced disclosures about revenue, provides guidance for transactions that were not previously addressed comprehensively and improve guidance for multiple-element arrangements. Additionally, the FASB issued ASU 2016-10, *Identifying Performance Obligations and Licensing,* which provided additional guidance and clarity on this topic. This new standard was effective for the Company in first quarter of 2018.The two permitted transition methods under ASU 2014-09 are the full retrospective method, in which case the new standard would be applied to each prior period presented and the cumulative effect of applying the standard would be recognized as of the earliest period reported, or the modified retrospective method, in which case the cumulative effect of applying the new standard would be recognized as of the date of initial application. The Company elected the modified retrospective method and there was no impact upon the Company's consolidated financial statements upon adoption.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force).* This ASU requires changes in the presentation of certain items in the statement of cash flows including but not limited to debt prepayment or debt extinguishment costs; contingent consideration payments made after a business combination; proceeds from the settlement of insurance claims; proceeds from the settlement of corporate-owned life insurance policies and distributions received from equity method investees. This guidance was effective for annual periods and interim periods within those annual periods beginning after December 15, 2017, requires adoption on a retrospective basis and was effective for the Company on January 1, 2018. The Company adopted this standard and there was no impact to the Company's consolidated financial statements upon adoption.

In November 2016, the FASB issued ASU 2016-18, *Restricted Cash* ("ASU 2016-18"). ASU 2016-18 requires that the statement of cash flows explain the change during the period in the total of cash, cash equivalents, and restricted cash. Accordingly, restricted cash will be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The Company adopted ASU 2016-18 during the first quarter of 2018, and the standard has been retrospectively applied to all periods presented. The following provides a reconciliation of cash, cash equivalents, and restricted cash reported within the Condensed Consolidated Balance Sheet to the total of the same such amounts shown in the Condensed Consolidated Statement of Cash Flows as of September 30, 2017:

Cash and cash equivalents	$	9,372,642
Restricted cash included in current assets		740,000
Total cash, cash equivalents, and restricted cash shown in the Condensed Consolidated Statement of Cash Flows	$	10,112,642

The following provides a reconciliation of cash, cash equivalents, and restricted cash reported within the Condensed Consolidated Balance Sheet to the total of the same such amounts shown in the Condensed Consolidated Statement of Cash Flows as of December 31, 2016:

Cash and cash equivalents	$	52,973,376
Restricted cash included in current assets		740,000
Total cash, cash equivalents, and restricted cash shown in the Condensed Consolidated Statement of Cash Flows	$	53,713,376

There was no restricted cash as of December 31, 2017 and September 30, 2018.

2. Fair Value of Financial Instruments

The estimated fair values of all of the Company's financial instruments, excluding long-term debt, approximate their carrying amounts in the consolidated balance sheets as of December 31, 2017 and September 30, 2018.

As of December 31, 2017 and September 30, 2018, the Company held certain assets and liabilities that are required to be measured at fair value on a recurring basis. These assets include money market funds included in cash equivalents. Additionally, as of December 31, 2017 and September 30, 2018, the Company had outstanding warrants recorded as a liability and measured at fair value on a recurring basis. The valuation of these financial instruments uses a three-tiered approach, which requires that fair value measurements be classified and disclosed in one of three tiers. These tiers are: Level 1, defined as quoted prices in active markets for identical assets or liabilities; Level 2, defined as valuations based on observable inputs other than those included in Level 1, such as quoted prices for similar assets and liabilities in active markets, or other inputs that are observable or can be corroborated by observable input data; and Level 3, defined as valuations based on unobservable inputs reflecting the Company's own assumptions, consistent with reasonably available assumptions made by other market participants.

The Company's Level 1 assets consist of money-market funds. The method used to estimate the fair value of the Level 1 assets is based on observable market data, as these money-market funds are publicly-traded. The Company has no Level 2 assets. As of each balance sheet date, observable market inputs may include trade information, broker or dealer quotes, bids, offers or a combination of these data sources.

The Company's warrant liability is classified as a Level 3 financial liability. The fair value of the warrant liability is measured using the Black-Scholes valuation model. Inherent in the Black-Scholes valuation model are assumptions related to expected stock price volatility, expected life, risk-free interest rate and dividend yield (see Note 9). Due to the market value of the Company's common stock and the $110.00 exercise price of its warrants, the Company determined that its outstanding warrants had no value as of September 30, 2018.

During the nine months ended September 30, 2018 and 2017, there were no transfers between Levels 1, 2, and 3 assets or liabilities.

As of December 31, 2017 and September 30, 2018, these financial instruments and respective fair values have been classified as follows:

	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Balance as of December 31, 2017
Assets				
Money-market funds	$ 4,098,037	$ —	$ —	$ 4,098,037
Total assets at fair value	$ 4,098,037	$ —	$ —	$ 4,098,037
Liabilities				
Warrants	$ —	$ —	$ 167,636	$ 167,636
Total liabilities at fair value	$ —	$ —	$ 167,636	$ 167,636

	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Balance as of September 30, 2018
Assets				
Money-market funds	$ 4,145,112	$ —	$ —	$ 4,145,112
Total assets at fair value	$ 4,145,112	$ —	$ —	$ 4,145,112
Liabilities				
Warrants	$ —	$ —	$ —	$ —
Total liabilities at fair value	$ —	$ —	$ —	$ —

Changes in the fair value of the Company's Level 3 liability for warrants during the nine months ended September 30, 2018 were as follows:

Balance as of December 31, 2017	$ 167,636
Change in fair value during the period	(167,636)
Balance as of September 30, 2018	$ —

The amortized cost, gross unrealized holding gains, gross unrealized holding losses, and estimated fair value of money-market funds included in cash and cash equivalents as of December 31, 2017 and September 30, 2018 were as follows:

	As of December 31, 2017			
	Amortized Cost Basis	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Aggregate Fair Value
Money-market funds	$ 4,098,037	$ —	$ —	$ 4,098,037
	$ 4,098,037	$ —	$ —	$ 4,098,037

	As of September 30, 2018			
	Amortized Cost Basis	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Aggregate Fair Value
Money-market funds	$ 4,145,112	$ —	$ —	$ 4,145,112
	$ 4,145,112	$ —	$ —	$ 4,145,112

The fair value of the Company's debt was derived by evaluating the nature and terms of each note, considering the prevailing economic and market conditions as of each balance sheet date and based on the Level 2 valuation hierarchy of the fair value measurements standard using a present value methodology. The fair value of the Company's debt as of December 31, 2017 was approximately $19.1 million compared with its carrying value of $19.5 million (see Note 6). The fair value of the Company's debt as of September 30, 2018 was approximately $18.1 million compared with its carrying value of $18.5 million (see Note 6).

3. Restructuring Activities and Related Impairments of Property and Equipment and Leases

During the nine months ended September 30, 2017, the Company had restructuring activities and impairments of property and equipment and leases. These activities were completed during the year ended December 31, 2017 and there were no such activities during the nine months ended September 30, 2018. Following is a discussion of these activities during the nine months ended September 30, 2017.

As discussed in Note 1, the Company's most advanced product candidate was rocapuldencel-T, which the Company was developing for the treatment of mRCC and other cancers. The Company was conducting a pivotal Phase 3 clinical trial of rocapuldencel-T in combination with sunitinib / standard of care for the treatment of newly diagnosed mRCC. In February 2017, the IDMC for the ADAPT trial recommended that the trial be discontinued for futility based on its planned interim data analysis. The IDMC concluded that the trial was unlikely to demonstrate a statistically significant improvement in overall survival in the combination treatment arm utilizing the intent-to-treat population at the pre-specified number of 290 events (deaths), the primary endpoint of the study. This development triggered a restructuring of the Company's operations and impairments of property and equipment and leases during the nine months ended September 30, 2017. As set forth below, the Company recognized restructuring costs of $6.0 million and an impairment loss of property and equipment of $27.2 million during the nine months ended September 30, 2017 and restructuring costs of $0.7 million during the three months ended September 30, 2017.

Workforce Action Plan

On March 10, 2017, the Company enacted a workforce action plan designed to streamline operations and reduce the Company's operating expenses. Under this plan, the Company reduced its workforce by 61 employees during the nine months ended September 30, 2017. The Company recognized $1.2 million in severance costs and $3.2 million in stock-based compensation costs from the acceleration of vesting of stock options held by the terminated employees during the nine months ended September 30, 2017. Through additional targeted reductions and attrition, the workforce was further reduced to 21 employees as of September 30, 2018.

CTI Lease Agreement

In January 2017, the Company entered into a ten-year lease agreement with two five-year renewal options for 40,000 square feet of manufacturing and office space at CTI on the Centennial Campus of North Carolina State University in Raleigh, North Carolina. The Company provided a security deposit in the amount of $2.4 million as security for obligations under the lease agreement, which was provided in the form of a letter of credit. In March 2017, the Company initiated discussions with the landlord of the CTI facility regarding the termination of this lease.

In March 2017 the landlord of the CTI facility notified the Company that it was terminating the lease due to nonpayment of invoices for up-fit costs, effective immediately. On March 31, 2017, the Company entered into a termination agreement with the landlord terminating the lease as of March 17, 2017. From the $2.4 million letter of credit, the landlord drew down $0.7 million to cover unpaid construction costs in March 2017 and $1.7 million in April 2017 for lease termination damages and agreed to return $0.1 million in consideration for being able to salvage some of the construction costs. Pursuant to the termination agreement, the Company had no further obligations under the lease. During the nine months ended September 30, 2017, the Company recorded a lease termination fee of $1.6 million which is included in Restructuring costs on the statement of operations. The Company also recorded an impairment loss on Construction-in-progress on the property of $0.9 million during the nine months ended September 30, 2017.

Impairment of Centerpoint Facility and Construction-in-Progress

During the three months ended March 31, 2017, the Company also determined that it would no longer need to develop its facility in Durham County, North Carolina ("Centerpoint"), which the Company intended to be built to house the Company's corporate headquarters and primary manufacturing facility. In November 2017, the Company and TKC Properties, the landlord of the Centerpoint facility, entered into a lease termination agreement in connection with the sale by TKC of the facility to a third party. In the statement of operations for the nine months ended September 30, 2017, the Company recorded an impairment loss of $18.3 million for the Construction-in-progress on the property.

4. Property and Equipment and Assets Held for Sale

Property and equipment consist of the following:

	December 31, 2017	September 30, 2018
Office furniture and equipment	$ 639,603	$ 639,603
Computer equipment	989,137	892,105
Computer software	3,146,978	3,143,633
Laboratory equipment	6,050,640	4,487,348
Leasehold improvements	2,435,530	2,435,530
Total property and equipment, gross	13,261,888	11,598,219
Less: Accumulated depreciation and amortization	(9,679,565)	(9,770,037)
Property and equipment, net	$ 3,582,323	$ 1,828,182

The Company sold two isolators included in assets held for sale at December 31, 2017 during the nine months ended September 31, 2018 and received proceeds of $0.6 million. The Company reviews its property and equipment for impairment whenever events or changes indicate its carrying value may not be recoverable.

Depreciation and amortization expense was as follows:

Three months ended September 30, 2017	$ 242,471
Three months ended September 30, 2018	$ 714,275
Nine months ended September 30, 2017	$ 733,172
Nine months ended September 30, 2018	$ 1,657,719

5. Income Taxes

The Company has incurred net operating losses since inception and is forecasting additional losses through December 31, 2018. Therefore, no U.S. Federal, state or foreign income taxes are expected for 2018 and no provision for such taxes has been recorded as of September 30, 2018.

Due to the Company's history of losses since inception, there is not enough evidence at this time to support the conclusion that the Company will generate future income of a sufficient amount and nature to utilize the benefits of the Company's net deferred tax assets. Accordingly, as of December 31, 2017 and September 30, 2018, the Company provided a full valuation allowance against its net deferred tax assets since as of that time, the Company could not assert that it was more likely than not that these deferred tax assets would be realized.

On December 22, 2017, the U.S. government enacted the Tax Cuts and Jobs Act of 2017 (the "Tax Act"). ASC 740 "Income Taxes" generally requires the effects of the tax law change under the Tax Act to be recorded in the period of enactment. However, the SEC staff issued Staff Accounting Bulletin No. 118 to address situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. The Company has recognized the tax impacts in its consolidated financial statements for the year ended December 31, 2017, on a provisional basis. The ultimate impact may differ from these provisional amounts, possibly materially, due to among other things, additional analysis, changes in interpretations and assumptions the Company has made, and additional interpretive regulatory guidance that may be issued. The Company filed its 2017 U.S. corporate income tax return during the third quarter of 2018, which did not result in any material adjustments to the provisional amount originally recorded. The Company is continuing to evaluate the impact of the recently enacted tax law on its business and consolidated financial statements. For the three and nine months ended September 30, 2018, the Company has not made any measurement-period adjustments related to the provisional amounts recorded as of December 31, 2017.

6. Notes Payable and Gain on Early Extinguishment of Debt

Notes payable consist of the following as of December 31, 2017 and September 30, 2018:

	December 31, 2017	September 30, 2018
Convertible note payable to Pharmstandard (related party), including accrued interest	$ 6,302,959	$ 6,744,420
Convertible note payable to Invetech, including accrued interest	5,845,655	5,063,847
Convertible note payable to Saint-Gobain, including accrued interest	2,334,929	1,694,929
Note payable to Medinet, including accrued interest	4,958,824	4,983,494
Other notes payable	13,825	—
Total notes payable	19,456,192	18,486,690
Less current portion of convertible note payable to Invetech, including accrued interest	(1,300,000)	(900,000)
Less current portion of convertible note payable to Saint-Gobain, including accrued interest	(1,050,000)	(640,000)
Less current portion of note payable to Medinet, including accrued interest	(4,958,824)	(4,983,494)
Less current portion of other notes payable	(13,825)	—
Long-term portion of notes payable and convertible notes payable	$ 12,133,543	$ 11,963,196

Convertible Note Payable to Invetech. On September 22, 2017, the Company entered into the Satisfaction and Release Agreement with Invetech. Under the Satisfaction and Release Agreement, the Company agreed to make, issue and deliver to Invetech (i) a cash payment of $0.5 million, (ii) 57,142 shares of the Company's common stock with a fair value of $0.2 million on the date of issuance and (iii) an unsecured convertible promissory note in the original principal amount of $5.2 million on account of and in full satisfaction and release of all of the Company's payment obligations to Invetech arising under the Invetech Development Agreement prior to the date of the Satisfaction and Release Agreement, including the Company's obligation to pay Invetech up to a total of $8.3 million in deferred fees, bonus payments and accrued interest. As a result, the Company recognized a gain on the early extinguishment of debt of $1.5 million in the Company's statement of operations during the year ended December 31, 2017. Following is a summary of the terms of the convertible note payable to Invetech (the "Invetech Note").

The original principal amount of the Invetech Note is $5.2 million. The maturity date for the payment of principal and interest under the Invetech Note is September 30, 2020. The Invetech Note bears interest at a rate of 6.0% per annum, which interest will compound annually. The Invetech Note is not secured by any assets of the Company.

The Company was required to make quarterly installment payments under the Invetech Note for the fiscal quarters ending December 31, 2017 and March 31, 2018, each in an aggregate amount of up to $0.4 million, consisting of (i) cash in the amount of $0.2 million and (ii) if certain specified conditions are met as of the corresponding payment date, up to $0.2 million of shares of the Company's common stock. For the fiscal quarters ending June 30, 2018 through March 31, 2019, the Company is required to make quarterly installment payments, each in an aggregate amount of up to $0.3 million, consisting of (i) cash in the amount of $150,000 and (ii) if certain specified conditions are met as of the corresponding payment date, up to $150,000 of shares of the Company's common stock. For the fiscal quarters ending June 30, 2019 through June 30, 2020, the Company is required to make quarterly installment payments, each in an amount of $150,000, payable in cash. The Company made an installment payment of $0.2 million in cash to Invetech in each of the year ended December 31, 2017 and the three months ended March 31, 2018 and made an installment payment of $150,000 in each of the three months ended June 30, 2018 and three months ended September 30, 2018. The payments in common stock were not made in each of the year ended December 31, 2017, the three months ended March 31, 2018, the three months ended June 30, 2018 and the three months ended September 30, 2018 because the specified conditions were not met.

The Invetech Note also provides that on the anniversary of the issue date for each of the first three years following the issue date, the outstanding principal amount of the Invetech Note, if any, plus accrued and unpaid interest thereon shall automatically be deemed to be reduced by $250,000, if and only if the Company has paid all debt service payments due under the Invetech Note on or prior to the relevant anniversary date and no event of default, fundamental transaction or change of control, each as defined in the Invetech Note, has occurred on or prior to such anniversary date. As a result, on September 21, 2018, the anniversary of the issue date of the Invetech Note, the outstanding principal amount of the Invetech Note was automatically reduced by $250,000.

As detailed further below, Invetech may exercise its conversion rights upon: (i) maturity of the Invetech Note, (ii) certain change of control events, and (iii) certain events of default. In each case, the number of shares of common stock issuable upon such complete or partial conversion of the Invetech Note is determined by dividing the portion of the principal and accrued or unpaid interest to be converted by $10.00 per share (as adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction).

• *Maturity of the Invetech Note*. Upon maturity of the Invetech Note or at any time within 75 days of such maturity, Invetech may, at its option, elect to convert any amount of the outstanding principal and accrued interest into shares of the Company's common stock. The Company will be required to pay any amount not so converted in cash.

• *Change of Control*. Upon a change of control pursuant to which Invetech has a redemption right, Invetech may, at its option, elect to convert any amount of the outstanding principal and accrued interest, less any remaining installment payments required to be made in cash, into shares of the Company's common stock. The Company will be required to pay any amount not so converted in cash.

• *Default*. Upon the occurrence of certain events of default, Invetech may, at its option, elect to convert any amount of the outstanding principal and accrued interest into shares of the Company's common stock. The Company will be required to pay any amount not so converted in cash.

Subject to the aforementioned conversion rights of Invetech, the Company may prepay the Invetech Note in whole or in part at any time without penalty or premium.

Convertible Note Payable to Saint-Gobain. On November 22, 2017, the Company entered into the Saint-Gobain Satisfaction and Release Agreement with Saint-Gobain. Under the Saint Gobain Satisfaction and Release Agreement, the Company agreed to make, issue and deliver to Saint-Gobain (i) a cash payment of $0.5 million, (ii) 34,499 shares of common stock, (iii) an unsecured convertible promissory note in the original principal amount of $2.4 million, and (iv) certain specified equipment originally provided to the Company by Saint-Gobain under the Saint-Gobain Development Agreement, on account of and in full satisfaction and release of all of the Company's payment obligations to Saint-Gobain arising under the Saint-Gobain Development Agreement, prior to the date of the Saint-Gobain Satisfaction and Release Agreement, including the development fees and charges. In connection with entering into the Saint-Gobain Satisfaction and Release Agreement, the Company and Saint-Gobain entered into an amendment to the Saint-Gobain Development Agreement to extend the term to December 31, 2019. Following is a summary of the terms of the convertible note payable to Saint-Gobain (the "Saint-Gobain Note").

The original principal amount of the Saint-Gobain Note is $2.4 million. The maturity date for the payment of principal and interest under the Note is September 30, 2020. The Note bears interest at a rate of 6.0% per annum, which interest will compound quarterly. The Note is not secured by any assets of the Company.

The Company was required to make quarterly installment payments for the fiscal quarters ending December 31, 2017 and March 31, 2018, each in an aggregate amount of up to $340,000, consisting of (i) cash in the amount of $200,000 and (ii) if certain specified conditions are met as of the corresponding payment date, up to $140,000 of shares of the Company's common stock. For the fiscal quarters ending June 30, 2018 and September 30, 2018, the Company was required to make quarterly installment payments, each in an aggregate amount of up to $245,000, consisting of (i) cash in the amount of $125,000 and (ii) if certain specified conditions are met as of the corresponding payment date, up to $120,000 of shares of the Company's common stock. For the fiscal quarters ending December 31, 2018 and March 31, 2019, the Company is required to make quarterly installment payments, each in an aggregate amount of up to $220,000, consisting of (i) cash in the amount of $100,000 and (ii) if certain specified conditions are met as of the corresponding payment date, up to $120,000 of shares of the Company's common stock. For the fiscal quarter ending December 31, 2017, March 31, 2018, June 30, 2018, September 30, 2018, December 31, 2018 and March 31, 2019, if the conditions required for the issuance of common stock are not met solely because the price of the common stock at the time is less than $4.06 per share (as adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction), then the Company will be required to pay in each such quarter cash equal to 50% of the value of the common stock that would otherwise have been issued. For the fiscal quarters ending June 30, 2019 through June 30, 2020, the Company is required to make quarterly installment payments, each in an amount of $100,000, payable in cash. The Company made an installment payment of $0.3 million in cash to Saint-Gobain in each of the year ended December 31, 2017 and the three months ended March 31, 2018 and made an installment payment of $0.2 million in each of the three months ended June 30, 2018 and three months ended September 30, 2018. The payments in common stock were not made in each of the year ended December 31, 2017, the three months ended March 31, 2018, the three months ended June 30, 2018 and the three months ended September 30, 2018 because the specified conditions were not met.

As detailed further below, Saint-Gobain may exercise its conversion rights upon: (i) maturity of the Saint-Gobain Note, (ii) certain change of control events, and (iii) certain events of default. In each case, the number of shares of common stock issuable upon such complete or partial conversion of the Saint-Gobain Note is determined by dividing the portion of the principal and accrued or unpaid interest to be converted by $10.00 per share (as adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction).

- *Maturity of the Note*. Upon maturity of the Saint-Gobain Note or at any time during the 75 day period prior to the maturity date of the note, Saint-Gobain may, at its option, elect to convert any amount of the outstanding principal and accrued interest into shares of the Company's common stock. The Company will be required to pay any amount not so converted in cash.

- *Change of Control*. Upon a change of control pursuant to which Saint-Gobain has a redemption right, Saint-Gobain may, at its option, elect to convert any amount of the outstanding principal and accrued interest, less any remaining installment payments required to be made in cash, into shares of the Company's common stock. The Company will be required to pay any amount not so converted in cash.

- *Default*. Upon the occurrence of certain events of default, Saint-Gobain may, at its option, elect to convert any amount of the outstanding principal and accrued interest into shares of the Company's common stock. The Company will be required to pay any amount not so converted in cash.

Subject to the aforementioned conversion rights of Saint-Gobain, the Company may prepay the Saint-Gobain Note in whole or in part at any time without penalty or premium.

Convertible Note Payable to Pharmstandard. On June 15, 2017, the Company entered into a note purchase agreement (the "Note Purchase Agreement") with Pharmstandard, pursuant to which the Company agreed to issue and sell to Pharmstandard a secured convertible promissory note in the original principal amount of $6.0 million (the "Pharmstandard Note").

The Company issued the Pharmstandard Note on June 21, 2017, the closing date of the financing. Under the Pharmstandard Note, the maturity date for the payment of principal and interest is the fifth anniversary of the issue date. The Pharmstandard Note bears interest at a rate of 9.5% per annum, which interest compounds annually. The Pharmstandard Note is secured by a lien on and security interest in all of the Company's intellectual property. The Company may prepay the Pharmstandard Note in whole or in part at any time without penalty or premium. Upon the occurrence of certain events of default, Pharmstandard will have the option to require the Company to repay the unpaid principal amount of the Pharmstandard Note and any unpaid accrued interest.

In addition, at Pharmstandard's election, Pharmstandard may convert the entire principal and interest on the Pharmstandard Note into shares of the Company's common stock at a price per share equal to $10.00. However, Pharmstandard will not be permitted to convert the entire Pharmstandard Note if such conversion would result in Pharmstandard and its affiliates holding shares that exceed 39.9% of the total number of outstanding shares of common stock of the Company or 39.9% of the combined voting power of all outstanding securities of the Company. To the extent that conversion of the entire Pharmstandard Note would cause Pharmstandard and its affiliates to exceed these thresholds, Pharmstandard may convert a portion of the Pharmstandard Note to the extent these thresholds are not exceeded by such partial conversion.

Pharmstandard is the Company's largest stockholder, and beneficially owned, in the aggregate, shares representing approximately 14.70% of the Company's outstanding common stock as of November 17, 2018. In addition, two members of the Company's board of directors are closely associated with Pharmstandard.

Venture Loan Facility and Gain on Early Extinguishment of Debt. In September 2014, the Company entered into the Loan Agreement with the Lenders under which the Company could borrow up to $25.0 million in two tranches of $12.5 million each (the "Loan Facility").

The Company borrowed the first tranche of $12.5 million upon the closing of the Loan Facility in September 2014 and borrowed the second tranche of $12.5 million in August 2015. The per annum interest rate for each tranche was a floating rate equal to 9.25% plus the amount by which the one-month London Interbank Offered Rate ("LIBOR") exceeds 0.50% (effectively a floating rate equal to 8.75% plus the one-month LIBOR Rate). The total per annum interest rate was not to exceed 10.75%.

The Company incurred $0.4 million in debt issuance costs in connection with the closing of the Loan Facility. Debt issuance costs were presented in the Company's consolidated balance sheet as a direct deduction from the associated liability and amortized to interest expense over the terms of the related debt. Debt issuance costs were eliminated on the Company's consolidated balance sheet as of December 31, 2017 as a result of the early extinguishment of debt under the payoff letter discussed below.

The Company made payments with respect to the first tranche of $12.5 million on an interest-only basis monthly through October 31, 2016, and was obligated to make monthly payments of principal and accrued interest through the scheduled maturity date for the first tranche loan on September 30, 2018. In addition, a final payment for the first tranche loan equal to $0.6 million was due on September 30, 2018, or such earlier date specified in the Loan Agreement. The Company was recognizing the final payment of $0.6 million as accrued interest over the expected life of the first tranche loan. The Company agreed to repay the second tranche loan of $12.5 million in 18 monthly payments of interest only until February 7, 2017, followed by 24 monthly payments of principal and accrued interest through the scheduled maturity date for the second tranche loan on February 7, 2019. In addition, a final payment of $0.6 million was due on February 7, 2019, or such earlier date specified in the Loan Agreement. The Company was recognizing the final payment of $0.6 million as accrued interest over the expected life of the second tranche loan. In addition, the Company agreed that if the Company repaid all or a portion of the loan prior to the applicable maturity date, it would pay the Lenders a prepayment penalty fee based on a percentage of the then outstanding principal balance, equal to 3% if the prepayment occurs on or before 24 months after the funding date, 2% if the prepayment occurs more than 24 months after, but on or before 36 months after, the funding date thereof, or 1% if the prepayment occurs more than 36 months after the funding date thereof.

On March 3, 2017, the Company entered into a payoff letter with the Lenders, pursuant to which the Company paid on March 6, 2017, a total of $23.1 million to the Lenders, representing the principal balance and accrued interest outstanding under the Loan Agreement in repayment of the Company's outstanding obligations under the Loan Agreement. In addition, the Company issued to the Lenders five year warrants to purchase an aggregate of 5,000 shares of the Company's common stock at an exercise price of $26.00 per share in consideration of the Lenders accepting the $23.1 million. The Company recognized a gain on this early extinguishment of debt of $0.2 million during the year ended December 31, 2017 which is included in Other income (expense) on the statement of operations. The payoff of the debt was considered a troubled debt restructuring because of the doubt surrounding the Company's ability to continue as a going concern and the fact that the final payment of $1.25 million and the pre-payment penalty of $0.6 million were waived by the Lenders in exchange for the issuance of the warrants.

Upon the payment of the $23.1 million and the issuance of the warrants pursuant to the payoff letter, all outstanding indebtedness and obligations of the Company owing to the Lenders under the Loan Agreement were deemed paid in full, and the Loan Agreement and the notes thereunder were terminated.

In connection with the Loan Agreement, the Company issued to the Lenders and their affiliates warrants to purchase a total of 4,139 shares of the Company's common stock at a per share exercise price of $181.20 (the "Venture Loan Warrants"). Upon the Company's satisfaction of the conditions precedent to the making of the second tranche loan, the Venture Loan Warrants became exercisable in full. The Venture Loan Warrants will terminate on September 29, 2021 or such earlier date as specified in the Venture Loan Warrants. As of September 29, 2014, the Company recorded a debt discount of $0.3 million equal to the value of these Venture Loan Warrants. This debt discount was offset against the long-term portion of the note payable balance and included in additional paid-in capital on the Company's consolidated balance sheet. Debt discount was amortized to interest expense over the terms of the related debt. Debt discount was eliminated on the Company's balance sheet as of December 31, 2017 as a result of the early extinguishment of debt discussed above.

Medinet Loan. In December 2013, in connection with a license agreement currently with Medinet, as described in Note 11, the Company borrowed $9.0 million pursuant to an unsecured promissory note that bears interest at a rate of 3.0% per annum. The principal and interest under the note are due and payable on December 31, 2018. Under the terms of the note and the license agreement, any milestone payments related to the developmental and regulatory milestones that become due will be applied first to the repayment of the loan. The Company has the right to prepay the loan at any time. If the Company has not repaid the loan by December 31, 2018, then the Company has agreed to grant to Medinet a non-exclusive, royalty-bearing license to make and sell Arcelis products in Japan for the treatment of cancer. In such event, the amounts owing under the loan as of December 31, 2018 may constitute pre-paid royalties under the license or would be due and payable. Royalties under this license would be paid until the expiration of the licensed patent rights in Japan at a rate to be negotiated. If the Company and Medinet cannot agree on the royalty rate, they have agreed to submit the matter to arbitration. Because the $9.0 million promissory note was issued at a below market interest rate, the Company allocated the proceeds of the loan between the license agreement and the debt at the time of issuance. Accordingly, as of the borrowing date, December 31, 2013, the Company recorded $6.9 million to notes payable, based upon an effective interest rate of 8.0%, and $2.1 million as a deferred liability.

During the year ended December 31, 2015, the Company recorded a $1.0 million milestone payment as deferred revenue under the Medinet license agreement and reduced the related note payable by $0.8 million and the deferred liability by $0.2 million. During the year ended December 31, 2016, the Company recorded a $2.0 million milestone payment as deferred revenue under the Medinet license agreement and reduced the related note payable by $1.5 million and the deferred liability by $0.5 million. During the year ended December 31, 2017, the Company recorded an additional $2.0 million milestone payment as deferred revenue under the Medinet license agreement and reduced the related note payable by $1.5 million and the deferred liability by $0.5 million.

Under the agreement, the Company had the right to revoke both the manufacturing license and the sale license to be granted to Medinet or the sale license only. On February 14, 2018, the Company notified Medinet that it irrevocably agreed to have no further right to exercise its right under the license agreement to revoke the manufacturing and the sale license, or the sale license only. As a result of the Company's decision to forego these revocation rights, during the three months ended March 31, 2018, the Company recognized as revenue $5.8 million of milestone payments that had previously been received and recorded as deferred revenue.

As of December 31, 2017 and September 30, 2018, the amount of the note payable was $5.0 million, including $1.9 million of accrued interest. As of December 31, 2017 and September 30, 2018, the total deferred liability associated with the Medinet note was $6.9 million and $1.0, respectively (see Note 11).

Other Notes. During November 2013, the Company borrowed $77,832 from a lending institution to finance the purchase of computer equipment, of which $13,825 and $0 in principal was outstanding as of December 31, 2017 and September 30, 2018, respectively. Borrowings were collateralized by substantially all of the computer equipment financed under the agreement, bore interest at a rate of 8.31% per annum and were to be repaid in 60 equal monthly installments commencing on the date of borrowing.

7. Stockholders' Deficit

Issuance of Restricted Stock in Nine Months Ended September 30, 2017

In lieu of paying certain annual cash bonuses for 2016, in January 2017 the Company granted restricted stock awards to certain of its executive officers and employees. The number of shares granted to each executive officer and employee was calculated by dividing 25% of the amount of the 2016 annual cash bonus that would otherwise have been paid by the closing price of the Company's common stock on January 13, 2017. A total of 4,005 restricted shares of common stock with an aggregate value of $394,534 were issued. Each of the restricted stock awards is subject to a lapsing right of repurchase in the Company's favor, which right lapsed with respect to 100% of the underlying shares of each award on April 17, 2017, for those executive officers and employees still providing services to the Company on such date. In April 2017 prior to vesting, 368 restricted shares of common stock were forfeited back to the Company. The Company granted an additional award of 2,333 restricted shares of common stock to an employee resulting in stock-based compensation expense of $20,999 included in General and administrative expenses.

During the three months ended September 30, 2017, the Company granted restricted stock awards for an aggregate of 369,999 shares of common stock with a fair value of $1.4 million to 43 employees resulting in stock-based compensation expense of $0.2 million and $0.1 million included in research and development and general and administrative expenses, respectively, for such period. Awards for 28,689 shares of common stock vested upon termination of the recipients' employment during the three months ended September 30, 2017, with such stock-based compensation costs of $0.1 million included in restructuring expenses. The remaining shares vested in full during December 2017 and January 2018.

Issuance of Common Stock in Nine Months Ended September 30, 2017

At-the-market Offering

In May 2015, the Company entered into a sales agreement with Cowen pursuant to which the Company could issue and sell shares of the Company's common stock from time to time having an aggregate offering price of up to $30 million through Cowen, acting as the Company's agent. Sales of the Company's common stock through Cowen could be made by any method permitted that was deemed an "at-the-market offering" as defined in Rule 415 under the Securities Act of 1933, as amended, including sales made directly on or through the Nasdaq Global Market, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices, and/or any other method permitted by law. Cowen was not required to sell any specific amount, but acted as the Company's sales agent using commercially reasonable efforts consistent with its normal trading and sales practices. Shares sold pursuant to the sales agreement were sold pursuant to a shelf registration statement, which became effective on May 14, 2015. Under the sales agreement, the Company paid Cowen a commission of up to 3% of the gross proceeds of any sales made pursuant to the sales agreement. During the nine months ended September 30, 2017, the Company sold 1,442,836 shares of common stock pursuant to the sales agreement, resulting in proceeds of $7.8 million, net of commissions and issuance costs.

Issuance of Restricted Stock in Nine Months Ended September 30, 2018

During March 2018, the Company issued 210,000 restricted shares of common stock to employees, including certain executives. In connection with the delisting of the Company's common stock from The Nasdaq Capital Market, in April 2018 such restricted shares of common stock were forfeited back to the Company.

Issuance of Common Stock in Nine Months Ended September 30, 2018

At-the-Market Offering

In February 2018, the Company amended and restated the sales agreement with Cowen to increase the maximum aggregate offering price from $30 million to up to $45 million. From December 31, 2017 through April 25, 2018, the Company sold 4,135,993 shares of common stock pursuant to the sales agreement, resulting in proceeds of $7.5 million, net of commissions and issuance costs. However, upon the delisting of the Company's common stock from The Nasdaq Capital Market in April 2018, the Company ceased to sell any additional shares under the sales agreement.

Issuance of Common Stock under Collaboration Agreements

On April 2, 2018, in consideration for the rights granted under an option agreement entered into with Pharmstandard and Actigen Limited ("Actigen") in February 2018, the Company issued 169,014 shares of its common stock to Pharmstandard, the value of which will be creditable against the upfront license fee payable under the option agreement if the Company enters into a license agreement. The option agreement is described further in Note 11.

In January 2018, the Company entered into a stock purchase agreement with Lummy HK under which the Company agreed to issue and sell to Lummy HK in a private financing 375,000 shares of the Company's common stock for an aggregate purchase price of $1.5 million. On March 23, 2018, the Company and Lummy HK amended the stock purchase agreement to reduce the aggregate price for the shares to $450,000. Concurrent with such amendment, the Company entered into a third amendment to its license agreement with Lummy HK pursuant to which Lummy HK agreed to pay the Company a $1.05 million milestone payment. In April 2018, the Company received from Lummy HK $450,000 for the purchase of the 375,000 shares and a $1.05 million milestone payment.

8. Stock Incentive Plans

2014 Stock Incentive Plan and 2014 Employee Stock Purchase Plan

In January 2014, the Company's board of directors and stockholders approved, effective upon the closing of the Company's initial public offering, the 2014 Stock Incentive Plan (the "2014 Plan"). Under the 2014 Plan, the Company is authorized to grant incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units and other stock-based awards for 570,746 shares of common stock plus an annual increase in the number of shares of our common stock available for issuance under the plan on the first day of each fiscal year beginning with the fiscal year ending December 31, 2018 and continuing each fiscal year until, and including, the fiscal year ending December 31, 2024, equal to the lowest of 250,000 shares of common stock, four percent (4%) of the outstanding shares of common stock on such date or an amount determined by our board of directors.

At the July 28, 2017 stockholders' meeting, the stockholders approved an amendment to the 2014 Plan to increase the number of shares of common stock authorized for issuance under the 2014 Plan by 300,000 and to increase the maximum number of shares that automatically may be added to the 2014 Plan on the first day of each fiscal year until the fiscal year ending December 31, 2024 by 134,548 shares, such that the total number of shares of common stock authorized for issuance under the 2014 Plan is equal to the sum of 570,746 shares, plus an annual increase to be added on the first day of each fiscal year, beginning with the fiscal year ending December 31, 2018 and continuing each fiscal year until, and including, the fiscal year ending December 31, 2024, equal to the lowest of (i) 250,000 shares of Common Stock, (ii) four percent (4%) of the outstanding shares of Common Stock on such date or (iii) an amount determined by the Company's board of directors.

Also in January 2014, the Company's board of directors and stockholders approved, effective upon the closing of the Company's initial public offering, a 2014 Employee Stock Purchase Plan (the "2014 ESPP"). Under the 2014 ESPP, on the offering commencement date of each plan period (the "Purchase Plan Period"), the Company will grant to each eligible employee who is then a participant in the 2014 ESPP an option to purchase shares of common stock. The employee may authorize up to a maximum of 10% of his or her base pay to be deducted by the Company during each Purchase Plan Period. Each employee who continues to be a participant in the 2014 ESPP on the last business day of the Purchase Plan Period is deemed to have exercised the option, to the extent of accumulated payroll deductions within the 2014 ESPP ownership limits.

Under the terms of the 2014 ESPP, the option exercise price shall be determined by the Company's board of directors for each Purchase Plan Period and the option exercise price will be at least 85% of the applicable closing price of the common stock. The option exercise price will be 85% of the lower of the Company's closing stock price on the first and last business day of each Purchase Plan Period. The Company's first Purchase Plan Period commenced on September 2, 2014 and ended on February 27, 2015. For the first Purchase Plan Period, 652 shares were purchased with employee withholdings at an option exercise price based upon 85% of the closing price on February 27, 2015 of $180.40, resulting in the recognition of share-based compensation expense of $54,508. The Company's second Purchase Plan Period commenced on March 2, 2015 and ended on August 31, 2015. For the second Purchase Plan Period, 1,015 shares were purchased with employee withholdings at an option exercise price based upon 85% of the closing price on August 31, 2015 of $124.20, resulting in the recognition of share-based compensation expense of $72,800. The Company's third Purchase Plan Period commenced on September 1, 2015 and ended on February 29, 2016. For the third Purchase Plan Period, 1,814 shares were purchased with employee withholdings at an option exercise price based upon 85% of the closing price of $88.80 on February 29, 2016, resulting in the recognition of share-based compensation expense of $107,455. The Company's fourth Purchase Plan Period commenced on March 1, 2016 and ended on August 31, 2016. For the fourth Purchase Plan Period, 1,507 shares were purchased with employee withholdings at an option exercise price based upon 85% of the closing price at the beginning of the fourth Purchase Plan Period of $98.20, resulting in the recognition of share-based compensation expense of $63,788. The Company's fifth Purchase Plan Period commenced on September 1, 2016 and ended on February 28, 2017. For the fifth Purchase Plan Period, 428 shares were purchased with employee withholdings at an option exercise price based upon 85% of $23.00 on February 28, 2017, resulting in the recognition of share-based compensation expense of $30,064. The Company's sixth Purchase Plan Period commenced on March 1, 2017 and ended on August 31, 2017. For the sixth Purchase Plan Period, 999 shares were purchased with employee withholdings at an option exercise price based upon 85% of $4.00 on August 31, 2017, resulting in the recognition of share-based compensation expense of $17,711. The Company did not commence a new Purchase Plan Period after September 1, 2017.

Upon the exercise of stock options, vesting of other awards and purchase of shares through the 2014 ESPP or under the 2014 Plan, the Company issues new shares of common stock. All awards granted under the 2014 Plan that are canceled prior to vesting or expire unexercised are returned to the approved pool of reserved shares under the 2014 Plan and made available for future grants. As of September 30, 2018, there were 317,958 shares of common stock remaining available for future issuance under the 2014 Plan and 10,899 shares of common stock remaining available for future issuance under the 2014 ESPP.

The Company recorded the following share-based compensation expense:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2018	2017	2018
Research and development	$ 620,083	$ 154,895	$ 1,545,588	$ 663,325
General and administrative	797,752	406,095	2,285,798	1,307,156
Restructuring costs	563,745	—	3,215,848	—
Total stock-based compensation expense	$ 1,981,580	$ 560,990	$ 7,047,234	$ 1,970,481

Allocations to research and development and general and administrative expenses are based upon the department to which the associated employee reported. No related tax benefits of the stock-based compensation expense have been recognized. Stock-based payments issued to non-employees are recorded at their fair values and are periodically revalued as the equity instruments vest and are recognized as expense over the related service period. As part of the restructuring costs discussed in Note 3, the Company recognized $0.6 million and $3.2 million in stock-based compensation expense from the acceleration of vesting of stock options and restricted stock during the three and nine months ended September 30, 2017, respectively, for 61 employees that were terminated during the nine months ended September 30, 2017.

During the three months ended September 30, 2017, the Company granted options to a new director to purchase a total of 1,500 shares of the Company's common stock at an exercise price of $3.40 per share, which was the closing price of the Company's common stock on the grant date. No options were granted during the three months ended September 30, 2018. During the nine months ended September 30, 2017, the Company granted options to employees and to a new member of its board of directors to purchase a total of 70,604 shares of the Company's common stock at exercise prices ranging from $3.40 to $101.00 per share, which, in each instance was the closing price of the Company's common stock on the grant date. No options were granted during the nine months ended September 30, 2018.

The following table summarizes the Company's stock option activity during the nine months ended September 30, 2018:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Contractual Term (in years)
Outstanding as of December 31, 2017	269,514	$ 111.91	
Granted	—	$ —	
Exercised	—	$ —	
Cancelled	(85,893)	$ 141.71	
Outstanding as of September 30, 2018	183,621	$ 118.11	6.09
Exercisable as of September 30, 2018	133,661	$ 119.22	6.56
Vested and expected to vest as of September 30, 2018	179,774	$ 118.17	6.54

Valuation Assumptions for Stock Option Plans and Employee Stock Purchase Plan

The employee stock-based compensation expense recognized was determined using the Black-Scholes option valuation model. Option valuation models require the input of subjective assumptions and these assumptions can vary over time. The weighted average assumptions used were as follows for the periods indicated:

	Stock Option Plan		Employee Stock Purchase Plan	
	Nine Months Ended September 30,		Nine Months Ended September 30,	
	2017	2018	2017	2018
Risk-free interest rate	2.26%	—	0.79%	—
Dividend yield	0%	—	0%	—
Expected option term (in years)	7	—	0.5	—
Volatility	86%	—	141%	—

9. Warrants

In March 2016, the Company sold and certain investors purchased for a total purchase price of $19.9 million a total of 182,621 shares of common stock and warrants to purchase a total of 136,966 shares of common stock at a per share exercise price of $107.00. These warrants will terminate on March 14, 2021 or such earlier date as specified in the warrants. Additionally, in June 2016, the Company sold and such investors purchased for a total purchase price of $29.8 million a total of 273,933 shares of common stock and warrants to purchase a total of 205,450 shares of common stock at a per share exercise price of $107.00. These warrants will terminate on June 29, 2021 or such earlier date as specified in the warrants. In June 2016, warrants to purchase 2,803 shares of common stock were exercised for proceeds of $0.3 million to the Company.

In August 2016, the Company sold and certain investors purchased for a total purchase price of $50.0 million a total of 454,545 shares of common stock and warrants to purchase a total of 340,909 shares of common stock at a per share exercise price of $110.00 (the "August 2016 Warrants"). These warrants will terminate on August 2, 2021 or such earlier date as specified in the warrants.

As discussed in Note 6 regarding the Company's notes payable, in connection with the Loan Agreement in September 2014, the Company issued to the Lenders and their affiliates the Venture Loan Warrants. Upon the Company's satisfaction of the conditions precedent to the making of the second tranche loan, the Venture Loan Warrants became exercisable in full. The Venture Loan Warrants will terminate on September 29, 2021 or such earlier date as specified in the Venture Loan Warrants. In addition, in March 2017, the Company issued to the Lenders five year warrants to purchase an aggregate of 5,000 shares of the Company's common stock at an exercise price of $26.00 per share in consideration of the Lenders accepting the early pay-off of the indebtedness under the Loan Agreement. These warrants were recorded at a fair value of $87,100 and included in additional paid-in capital as of December 31, 2017 and September 30, 2018.

All outstanding warrants were issued with an original life of five years. As of December 31, 2017 and September 30, 2018, outstanding warrants to purchase a total of 689,661 shares of the Company's common stock were as follows:

Type of Warrant and Classification	Date of Issuance	Number of Shares	Exercise Price	Expiration Date(s)
Common stock - Equity	9/29/14	4,139	$ 181.20	9/29/21
Common stock - Equity	3/4/16	134,163	$ 107.00	3/4/21
Common stock - Equity	6/29/16	205,450	$ 107.00	6/29/21
Common stock - Liability	8/2/16	340,909	$ 110.00	8/02/21
Common stock - Equity	3/6/17	5,000	$ 26.00	3/06/22

The following warrants were issued in August 2016 and remained outstanding as of December 31, 2017 and September 30, 2018, and include provisions that could require cash settlement. The August 2016 Warrants were therefore recorded as liabilities of the Company at the estimated fair value as of the date of issuance. The August 2016 Warrants are required to be recorded at fair value as of the end of each subsequent reporting period, with changes in fair value recorded as other income or expense in the Company's condensed consolidated statement of operations in each subsequent period:

	August 2016 Warrants
Exercise price	$ 110.00
Expiration date	August 2, 2021
Total shares issuable on exercise	340,909

The fair value of the August 2016 Warrants has been measured using the Black-Scholes valuation model. Inherent in the Black-Scholes valuation model are assumptions related to expected stock price volatility, expected life, risk-free interest rate and dividend yield. The risk-free interest rate is based on the U.S. Treasury five-year maturity yield curve in effect on the date of valuation. The dividend yield percentage is zero because the Company neither currently pays dividends nor intends to do so during the expected term of the August 2016 Warrants. Expected stock price volatility is based on the weighted average of the Company's historical common stock volatility and the volatility of several peer public companies. The expected life of the August 2016 Warrants is assumed to be equivalent to their remaining contractual term.

The assumptions used by the Company to determine the fair value of the August 2016 Warrants are summarized in the following table as of December 31, 2017. Due to the market value of the Company's common stock and the $110.00 exercise price of its warrants, the Company determined that its outstanding warrants had no value as of September 30, 2018.

	December 31, 2017	September 30, 2018
Exercise price of warrants	$ 110.00	$ 110.00
Closing underlying stock price on date of valuation	$ 3.00	$ —
Expected stock price volatility	112%	—
Expected life (in years)	3.58	—
Risk-free interest rate	2.04%	—
Expected dividend yield	0.0%	—
Valuation per common share underlying each warrant	$ 0.49	$ —
Total liability for warrants on the consolidated balance sheet	$ 167,636	$ —
Decrease in fair value during the period	20,758,425	$ 167,636

In 2013, the Company agreed to enter into a manufacturing rights agreement for the manufacturing of rocapuldencel-T in the European market with Pharmstandard, which also provided for the issuance of warrants to Pharmstandard to purchase 24,989 shares of the Company's common stock at an exercise price of $116.40 per share. As of September 30, 2018, the Company had not entered into this manufacturing rights agreement or issued such warrants.

10. Contract with the NIH and NIAID

In September 2006, the Company entered into a multi-year research contract with the NIH and NIAID to design, develop and clinically test an autologous HIV immunotherapy capable of eliciting therapeutic immune responses. The Company used funds from this contract to develop AGS-004. Under this contract, as amended, the NIH and NIAID committed to fund up to a total of $39.8 million, including reimbursement of direct expenses and allocated overhead and general and administrative expenses of up to $38.4 million and payment of other specified amounts totaling up to $1.4 million upon the Company's achievement of specified development milestones. Since September 2010, the Company has received reimbursement of its allocated overhead and general and administrative expenses at provisional indirect cost rates equal to negotiated provisional indirect cost rates agreed to with the NIH and NIAID in September 2010. These provisional indirect cost rates are subject to adjustment based on the Company's actual costs pursuant to the agreement with the NIH and NIAID. This commitment originally extended until May 2013. The Company agreed to an additional modification of the Company's contract with the NIH and NIAID under which the NIH and NIAID agreed to increase their funding commitment to the Company by an additional $5.4 million in connection with the extension of the contract from May 2013 to September 2015. Additionally, a contract modification for a $0.5 million increase was agreed to by the NIH on September 18, 2014 to cover a portion of the manufacturing costs of the planned Phase 2 clinical trial of AGS-004 for long-term viral control in pediatric patients. On June 29, 2016, a contract modification was agreed to that extended the NIH and NIAID's commitment under the contract to July 31, 2018. The Company agreed to a statement of work under the contract, and was obligated to furnish all the services, qualified personnel, material, equipment, and facilities, not otherwise provided by the U.S. government, needed to perform the statement of work. This contract expired as of July 31, 2018.

The Company recognized revenue from reimbursements earned in connection with the contract as reimbursable costs were incurred and revenues from the achievement of milestones under the NIH and NIAID contract upon the accomplishment of any such milestone.

For the three months ended September 30, 2017 and 2018, the Company recorded revenue under the NIH and NIAID agreement of $17,792 and $69,754, respectively. For the nine months ended September 30, 2017 and 2018, the Company recorded revenue under the NIH and NIAID agreement of $145,949 and $126,819, respectively. The Company has recorded total revenue of $38.2 million through September 30, 2018 under this agreement. As of December 31, 2017 and September 30, 2018, the Company recorded a receivable from the NIH and NIAID of $31,977 and $56,751, respectively. The concentration of credit risk is equal to the outstanding accounts receivable and such risk is subject to the credit worthiness of the NIH and NIAID. There have been no credit losses under this arrangement.

11. Collaboration Agreements

Pharmstandard License Agreement

In August 2013, Pharmstandard purchased shares of the Company's series E preferred stock. Concurrent with such purchase, the Company entered into an exclusive royalty-bearing license agreement with Pharmstandard. Under this license agreement, the Company granted Pharmstandard and its affiliates a license, with the right to sublicense, develop, manufacture and commercialize rocapuldencel-T and other products for the treatment of human diseases, which are developed by Pharmstandard using the Company's individualized immunotherapy platform, in the Russian Federation, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine and Uzbekistan, which the Company refers to as the Pharmstandard Territory. The Company also provided Pharmstandard with a right of first negotiation for development and commercialization rights in the Pharmstandard Territory to specified additional products the Company may develop.

Under the terms of the license agreement, Pharmstandard licensed the Company rights to clinical data generated by Pharmstandard under the agreement and granted the Company an option to obtain an exclusive license outside of the Pharmstandard Territory to develop and commercialize improvements to the Company's Arcelis technology generated by Pharmstandard under the agreement, a non-exclusive worldwide royalty-free license to Pharmstandard improvements to manufacture products using the Company's Arcelis technology and a license to specified follow-on licensed products generated by Pharmstandard outside of the Pharmstandard Territory, each on terms to be negotiated upon the Company's request for a license. In addition, Pharmstandard agreed to pay the Company pass-through royalties on net sales of all licensed products in the low single digits until it has generated a specified amount of aggregate net sales. Once the net sales threshold is achieved, Pharmstandard will pay the Company royalties on net sales of specified licensed products, including rocapuldencel-T, in the low double digits below 20%. These royalty obligations last until the later of the expiration of specified licensed patent rights in a country or the twelfth anniversary of the first commercial sale in such country on a country by country basis and no further royalties on specified other licensed products. After the net sales threshold is achieved, Pharmstandard has the right to offset a portion of the royalties Pharmstandard pays to third parties for licenses to necessary third party intellectual property against the royalties that Pharmstandard pays to the Company.

The agreement will terminate upon expiration of the royalty term, upon which all licenses will become fully paid-up perpetual exclusive licenses. Either party may terminate the agreement for the other party's uncured material breach or if specified conditions occur relating to the other party's insolvency or bankruptcy and the Company may terminate the agreement if Pharmstandard challenges or assists a third party in challenging specified patent rights of the Company. If Pharmstandard terminates the agreement upon the Company's material breach or bankruptcy, Pharmstandard is entitled to terminate the Company's licenses to improvements generated by Pharmstandard, upon which the Company may come to rely for the development and commercialization of rocapuldencel-T and other licensed products outside of the Pharmstandard Territory, and to retain its licenses from the Company and to pay the Company substantially reduced royalty payments following such termination.

In November 2013, the Company entered into an agreement with Pharmstandard under which Pharmstandard purchased shares of the Company's series E preferred stock. Under this agreement, the Company agreed to enter into a manufacturing rights agreement for the European market with Pharmstandard, which also provided for the issuance of warrants to Pharmstandard to purchase 24,989 shares of the Company's common stock at an exercise price of $116.40 per share. The Company has not entered into this manufacturing rights agreement or issued the warrants. All outstanding shares of the Company's preferred stock converted into shares of the Company's common stock upon the closing of its initial public offering in February 2014.

Pharmstandard and Actigen Option Agreement

On February 1, 2018, the Company entered into an option agreement with Pharmstandard and Actigen to evaluate, with an option to license, certain patent rights and know-how related to a group of fully human PD1 monoclonal antibodies and related technology held by Actigen. Actigen previously granted Pharmstandard an option to exclusively license these patent rights. Under the option agreement, Pharmstandard granted to the Company (i) an exclusive license for evaluation purposes only to make, have made, use and import the PD1 monoclonal antibodies covered by these patent rights (but not offer to sell or sell products and processes covered by or incorporating the patent rights) for a period of one year from the date of the agreement and (ii) an option exercisable during the one-year period to obtain an exclusive license (with the right to sublicense) under the patent rights to make, have made, use, offer for sale, sell and import (with a right to grant sublicenses) the PD1 monoclonal antibodies for all prophylactic, therapeutic and diagnostic uses and for all human diseases and conditions in the United States and Canada. The parties have agreed that, if the Company exercises the option during the option exercise period, the parties will negotiate in good faith a license agreement on the terms and conditions outlined in the option agreement, including payments by the Company to Pharmstandard of (i) an upfront license fee of $3.6 million, payable upon execution of the license agreement in common stock of the Company, (ii) various development and regulatory milestone payments totaling $8.5 million, and (iii) upper single digit percentage royalties on net sales of any pharmaceutical product or therapeutic regimen incorporating the licensed PD1 monoclonal antibodies that will apply on a country-by-country basis until the later of the last to expire patent or ten years from the date of first commercial sale, against which the first $5.0 million of the Company's development expenditures will be credited as prepaid royalties.

In consideration for the rights granted under the option agreement, the Company issued 169,014 shares of its common stock to Pharmstandard, the value of which will be creditable against the upfront license fee payable under the option agreement if the Company enters into a license agreement. Unless earlier terminated by any party for uncured material breach or by the Company without cause upon thirty days prior written notice, the option agreement will terminate upon the later of the end of the option exercise period if the Company decides not to exercise the option or sixty days after the Company exercises the option.

Green Cross License Agreement

In July 2013, the Company entered into an exclusive royalty-bearing license agreement with Green Cross Corp. ("Green Cross"). Under this agreement, the Company granted Green Cross a license to develop, manufacture and commercialize rocapuldencel-T for mRCC in South Korea. The Company also provided Green Cross with a right of first negotiation for development and commercialization rights in South Korea to specified additional products the Company may develop.

Under the terms of the license, Green Cross has agreed to pay the Company $0.5 million upon the initial submission of an application for regulatory approval of a licensed product in South Korea, $0.5 million upon the initial regulatory approval of a licensed product in South Korea and royalties ranging from the mid-single digits to low double digits below 20% on net sales until the fifteenth anniversary of the first commercial sale in South Korea. In addition, Green Cross has granted the Company an exclusive royalty free license to develop and commercialize all Green Cross improvements to the Company's licensed intellectual property in the rest of the world, excluding South Korea, except that, as to such improvements for which Green Cross makes a significant financial investment and that generate significant commercial benefit in the rest of the world, the Company is required to negotiate in good faith a reasonable royalty that the Company will be obligated to pay to Green Cross for such license. Under the terms of the agreement, the Company is required to continue to develop and to use commercially reasonable efforts to obtain regulatory approval for rocapuldencel-T in the United States.

The agreement will terminate upon expiration of the royalty term, which is 15 years from the first commercial sale, upon which all licenses will become fully paid up perpetual non-exclusive licenses. Either party may terminate the agreement for the other party's uncured material breach or if specified conditions occur relating to the other party's insolvency or bankruptcy and the Company may terminate the agreement if Green Cross challenges or assists a third party in challenging specified patent rights of the Company. If Green Cross terminates the agreement upon the Company's material breach or bankruptcy, Green Cross is entitled to terminate the Company's licenses to improvements and retain its licenses from the Company and to pay the Company substantially reduced milestone and royalty payments following such termination.

Medinet License Agreement

In December 2013, the Company entered into a license agreement with Medinet Co., Ltd. This agreement was subsequently novated, amended and restated among the Company, Medinet Co., Ltd. and MEDcell Co., Ltd. in October 2014. Pursuant to the novation, Medinet Co., Ltd. assigned and transferred all of its rights and obligations under the original license agreement, including the rights to receive payments under the $9.0 million note in favor of Medinet Co., Ltd., to MEDcell Co., Ltd. without any substantive change in the underlying rights or obligations. Medinet Co., Ltd. and MEDcell Co., Ltd. together are referred to herein as "Medinet." Under this agreement, the Company granted Medinet an exclusive, royalty-free license to manufacture in Japan rocapuldencel-T and other products using the Company's Arcelis technology solely for the purpose of the development and commercialization of rocapuldencel-T and these other products for the treatment of mRCC. The Company refers to this license as the manufacturing license.

In addition, under this agreement, the Company granted Medinet an option to acquire a nonexclusive, royalty-bearing license under the Company's Arcelis technology to sell in Japan rocapuldencel-T and other products for the treatment of mRCC. The Company refers to the option as the sale option and the license as the sale license. This option expired on April 30, 2016. As a result, Medinet may only manufacture rocapuldencel-T and these other products for the Company or its designee. The Company and Medinet have agreed to negotiate in good faith a supply agreement under which Medinet would supply the Company or its designee with rocapuldencel-T and these other products for development and sale for the treatment of mRCC in Japan. During the term of the manufacturing license, the Company may not manufacture rocapuldencel-T or these other products for the Company or any designee for development or sale for the treatment of mRCC in Japan.

In consideration for the manufacturing license, Medinet paid the Company $1.0 million. Medinet also loaned the Company $9.0 million in connection with the Company entering into the agreement. The Company agreed to use these funds in the development and manufacturing of rocapuldencel-T and the other products. Medinet also agreed to pay the Company milestone payments of up to a total of $9.0 million upon the achievement of developmental and regulatory milestones and $5.0 million upon the achievement of a sales milestone related to rocapuldencel-T and these products. Under the terms of the note and the manufacturing license agreement, any milestone payments related to the developmental and regulatory milestones that become due will be applied first to the repayment of the loan. The first milestone was achieved in July 2015 and resulted in a $1.0 million payment. The second milestone was achieved in June 2016 and resulted in a $2.0 million payment. The third milestone was achieved in March 2017 and resulted in a $2.0 million payment. Together, these milestone payments reduced the outstanding principal under the loan as of December 31, 2017 to $4.0 million.

In December 2013, in connection with the manufacturing license agreement with Medinet, the Company borrowed $9.0 million pursuant to an unsecured promissory note that bears interest at a rate of 3.0% per annum. The principal and interest under the note are due and payable on December 31, 2018. The Company has the right to prepay the loan at any time. If the Company has not repaid the loan by December 31, 2018, then the Company has agreed to grant to Medinet a non-exclusive, royalty-bearing license to make and sell Arcelis products in Japan for the treatment of cancer. In such event, the amounts owing under the loan as of December 31, 2018 may constitute pre-paid royalties under the license or would be due and payable. Royalties under this license would be paid until the expiration of the licensed patent rights in Japan at a rate to be negotiated. If the Company and Medinet cannot agree on the royalty rate, the Company and Medinet have agreed to submit the matter to arbitration.

The Company recorded the initial $1.0 million payment from Medinet as a deferred liability. In addition, because the $9.0 million promissory note was issued at a below market interest rate, the Company allocated the proceeds of the loan between the manufacturing license agreement and the debt at the time of issuance. Accordingly, as of December 31, 2013, the date of borrowing, the Company recorded $6.9 million to notes payable, based upon an effective interest rate of 8.0%, and $2.1 million as a deferred liability. During the year ended December 31, 2015, the Company recorded a $1.0 million milestone payment as deferred revenue under the license agreement and reduced the related note payable by $0.8 million and the deferred liability by $0.2 million.

During the year ended December 31, 2016, the Company recorded a $2.0 million milestone payment as deferred revenue under this license agreement and reduced the related note payable by $1.5 million and the deferred liability by $0.5 million. As of December 31, 2016, the amount of the note payable was $6.4 million, including $1.8 million accrued interest, and the total deferred liability associated with the Medinet note was $5.4 million.

During the year ended December 31, 2017, the Company recorded an additional $2.0 million milestone payment as deferred revenue under this license agreement and reduced the related note payable by $1.5 million and the deferred liability by $0.5 million. As of December 31, 2017, the amount of the note payable was $5.0 million, including $1.9 million of accrued interest, and the total deferred liability associated with the Medinet note was $6.9 million of which $6.0 million was deferred revenue.

On February 14, 2018, the Company notified Medinet that the Company irrevocably agreed to have no further right to exercise its right under the license agreement to revoke the manufacturing and sale license, or the sale license only. In all other respects, the Medinet license agreement remains in full force and effect. As a result of the revocation right no longer being of force and effect, the Company recognized $5.8 million of deferred milestone revenue as revenue under ASC 606 during the first quarter of 2018. As of September 30, 2018, the amount of the note payable was $5.0 million, including $1.9 million of accrued interest, and the total deferred liability associated with the Medinet note was $1.0 million of which $50,000 was deferred revenue. As of September 30, 2018, there are performance obligations related to the Medinet license agreement of $50,000 that are unsatisfied. The Company expects that the remaining performance obligations related to the Medinet license agreement will be satisfied by the end of 2018 and that upon such satisfaction, the $50,000 of deferred revenue will be recognized as revenue.

The agreement will terminate upon expiration of the royalty term, upon which all licenses will become fully paid up, perpetual non-exclusive licenses. Either party may terminate the agreement for the other party's uncured material breach or if specified conditions occur relating to the other party's insolvency or bankruptcy, and the Company may terminate the agreement if Medinet challenges or assists a third party in challenging specified patent rights of the Company. If Medinet terminates the agreement upon the Company's material breach or bankruptcy, Medinet is entitled to terminate the Company's licenses to improvements and retain its royalty-bearing licenses from the Company.

Lummy License Agreement

On April 7, 2015, the Company and Lummy HK, a wholly owned subsidiary of Chongqing Lummy Pharmaceutical Co. Ltd., entered into a license agreement (the "License Agreement") whereby the Company granted to Lummy HK an exclusive license under the Arcelis technology, including patents, know-how and improvements to manufacture, develop and commercialize products for the treatment of cancer ("Licensed Product") in China, Hong Kong, Taiwan and Macau (the "Territory"). Under the License Agreement, Lummy HK also has a right of first negotiation with respect to a license under the Arcelis technology for the treatment of infectious diseases in the Territory. This agreement was subsequently amended in December 2016, October 2017 and March 2018.

Under the terms of the License Agreement, the parties will share relevant data, and the Company will have a right to reference Lummy HK data for purposes of its development programs under the Arcelis technology. In addition, Lummy HK has granted to the Company an exclusive, royalty-free license under and to any and all Lummy HK improvements to the Arcelis technology conceived or reduced to practice by Lummy HK ("Lummy HK Improvements") and Lummy HK data to develop and/or commercialize products ("Arcelis-Based Products") outside the Territory, an exclusive, royalty-free license under and to any and all investigational new drug applications ("INDs") and other regulatory approvals and Lummy HK trademarks used for an Arcelis-Based Product to develop and/or commercialize an Arcelis-Based Product outside the Territory and a non-exclusive, worldwide, royalty-free license under any Lummy HK Improvements and Lummy HK data to manufacture Arcelis-Based Products anywhere in the world. Lummy HK has the right to reference the Company's data, INDs and other regulatory filings and submissions for the purpose of developing and obtaining regulatory approval of Licensed Products in the Territory.

Pursuant to the License Agreement, Lummy HK will pay the Company royalties on net sales and an aggregate of up to $22.3 million upon the achievement of manufacturing, regulatory and commercial milestones. The License Agreement will terminate upon expiration of the last to expire royalty term for all Arcelis-Based Products, with each royalty term being the longer of the expiration of the last valid patent claim covering the applicable Arcelis-Based Product and 10 years from the first commercial sale of such Arcelis-Based Product. Either party may terminate the License Agreement for the other party's uncured material breach or if specified conditions occur relating to the other party's insolvency or bankruptcy. The Company may terminate the License Agreement if Lummy HK challenges or assists a third party in challenging specified patent rights of the Company. If Lummy HK terminates the License Agreement upon the Company's material breach or bankruptcy, Lummy HK is entitled to terminate the licenses it granted to the Company and retain its licenses from the Company with respect to Arcelis-Based Products then in development or being commercialized, subject to Lummy HK's continued obligation to pay royalties and milestones with respect to such Arcelis-Based Products.

Pursuant to the License Agreement, Lummy HK paid the Company a $1.5 million milestone payment upon the achievement of a manufacturing milestone in October 2017. The milestone payment was made in consideration of the successful initiation of transfer of technology related to the manufacturing of rocapuldencel-T, to which Lummy HK has a license for commercialization in China and other Asian territories. The Company recorded this $1.5 million payment from Lummy HK as revenue.

In January 2018, the Company entered into a stock purchase agreement with Lummy HK under which the Company agreed to issue and sell to Lummy HK in a private financing 375,000 shares of the Company's common stock for an aggregate purchase price of $1.5 million. In March 2018, the Company and Lummy HK amended the stock purchase agreement to reduce the aggregate price for the shares to $450,000. Concurrent with such amendment, the Company entered into a third amendment to its license agreement with Lummy HK pursuant to which Lummy HK agreed to pay the Company a $1.05 million milestone payment. In April 2018, the Company received from Lummy HK $450,000 for the purchase of the 375,000 shares and a $1.05 million milestone payment.

As of September 30, 2018, there are performance obligations related to the Lummy HK License Agreement of $1.2 million that are unsatisfied. The remaining $1.2 million in performance obligations were to be satisfied and recognized as revenue on a straight-line basis over the estimated remaining license period from October 1, 2018 to December 31, 2029. As of December 31, 2017 and September 30, 2018, the Company had deferred revenue from the Lummy HK License Agreement of $1.2 million and $1.2 million, respectively.

12. Net Loss Per Share

Basic and diluted net loss per share of common stock was determined by dividing net loss by the weighted average of shares of common stock outstanding during the period. The Company's potentially dilutive shares, which include options to purchase common stock and warrants, have not been included in the computation of diluted net loss per share for all periods as the result would be antidilutive.

The following table presents the computation of basic and diluted net loss per share of common stock:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2018	2017	2018
Net loss	$ (6,065,947)	$ (5,000,647)	$ (38,684,637)	$ (13,590,631)
Weighted average common shares outstanding, basic and diluted	2,911,800	10,586,661	2,351,839	9,607,577
Net loss per share, basic and diluted	$ (2.08)	$ (0.47)	$ (16.45)	$ (1.41)

The following potentially dilutive securities have been excluded from the computation of diluted weighted average common shares outstanding, as they would be antidilutive:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2018	2017	2018
Stock options outstanding	274,192	194,653	286,962	220,929
Warrants outstanding	689,661	689,661	688,470	689,661
Convertible notes outstanding		1,448,352		1,448,352

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of our financial condition and results of operations together with our condensed consolidated financial statements and the related notes appearing in "Item 1. Financial Statements" in this Quarterly Report on Form 10-Q. In addition to historical information, some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report on Form 10-Q, including information with respect to our plans and strategy for our business, future financial performance, expense levels and liquidity sources, includes forward-looking statements that involve risks and uncertainties. You should read "Item 1A. Risk Factors" in this Quarterly Report on Form 10-Q for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

We are an immuno-oncology company that has been focused on the development and commercialization of individualized immunotherapies for the treatment of cancer and infectious diseases based on our proprietary precision immunotherapy technology platform called Arcelis.

In April 2018, we terminated our development program for rocapuldencel-T, our lead product candidate, which we had been developing for the treatment of metastatic renal cell carcinoma, or mRCC, and other cancers. Additionally, in August 2018, we ceased our support for the development of our other clinical product candidate, AGS-004, which we were developing for the eradication of HIV. We have ceased our research and development activities and we have significantly reduced our workforce. Based on a review of the status of our internal programs, resources and capabilities, we are pursuing a strategic alternative that may involve an asset sale, dissolution, liquidation, wind-down or protection under bankruptcy laws. There can be no assurance that we will be able to enter into a strategic transaction on a timely basis, on terms that are favorable to us, or at all. If we decide to seek protection under the bankruptcy laws, and if we decide to wind down the company under the bankruptcy laws or otherwise, it is unclear to what extent we will be able to pay our obligations to creditors, and, whether and to what extent any resources will be available for distributions to our stockholders. However, based on our current resources, we believe that it is unlikely that any resources will be available for distributions to our stockholders and that a likely outcome of our wind-down and potential bankruptcy proceeding will be the cancellation or extinguishment of all outstanding shares in the company without any payment or other distribution on account of those shares.

Prior to April 2018, we had been conducting a pivotal Phase 3 clinical trial of rocapuldencel-T in combination with sunitinib / standard of care for the treatment of newly diagnosed mRCC, or the ADAPT trial. In February 2017, the independent data monitoring committee, or the IDMC, for the ADAPT trial recommended that the trial be discontinued for futility based on its planned interim data analysis. The IDMC concluded that the trial was unlikely to demonstrate a statistically significant improvement in overall survival in the combination treatment arm, utilizing the intent-to-treat population at the pre-specified number of 290 events (deaths), the original primary endpoint of the study.

Notwithstanding the IDMC's recommendation, we determined to continue to conduct the trial while we analyzed interim data from the trial. Following a meeting with the U.S. Food and Drug Administration, or FDA, we determined to continue the ADAPT trial until at least the pre-specified number of 290 events occurred, and to submit to the FDA a protocol amendment to increase the pre-specified number of events for the primary analysis of overall survival in the trial beyond 290 events. In April 2018, we submitted a protocol amendment to the FDA that included an amended primary endpoint analysis with four co-primary endpoints. Subsequently in April 2018, we conducted another interim analysis of the data from the ADAPT trial, at which time 51 new events (deaths) had occurred subsequent to the February 2017 interim analysis. Based upon review of the interim data from this analysis, we determined that the endpoints were unlikely to be achieved if the trial were to be continued and decided to discontinue the ADAPT clinical trial.

We had also been developing AGS-004, also an Arcelis-based product candidate, for the treatment of HIV. We have completed Phase 1 and Phase 2 trials funded by government grants and a Phase 2b trial that was funded in full by the National Institutes of Health, or NIH, and the National Institute of Allergy and Infectious Diseases, or NIAID. More recently, we were supporting an investigator-initiated clinical trial of AGS-004 in adult HIV patients evaluating the use of AGS-004 in combination with vorinostat, a latency reversing drug, for HIV eradication. In connection with the cessation of our research and development activities, we recently ceased our support for the trial, and enrollment was suspended.

On March 3, 2017, we entered into a payoff letter with Horizon Technology Finance Corporation and Fortress Credit Co LLC, or the Lenders, under our venture loan and security agreement, or the Loan Agreement, pursuant to which we paid, on March 6, 2017, a total of $23.1 million to the Lenders, representing the principal balance and accrued interest outstanding under the Loan Agreement in repayment of our outstanding obligations under the Loan Agreement. In addition, we issued to the Lenders five year warrants to purchase an aggregate of 5,000 shares of common stock at an exercise price of $26.00 per share in consideration of the Lenders acceptance of $23.1 million as payment in full. Upon the payment of the $23.1 million and the issuance of the warrants pursuant to the payoff letter, all of our outstanding indebtedness and obligations to the Lenders under the Loan Agreement were paid in full, and the Loan Agreement and the notes thereunder were terminated.

In March 2017, we announced that our board of directors approved a workforce action plan designed to streamline operations and reduce operating expenses. During the year ended December 31, 2017, we recognized $1.2 million in severance costs, all of which was paid as of December 31, 2017. We also recognized $3.2 million in stock-based compensation expense from the acceleration of vesting of stock options and restricted stock held by the terminated employees during the year ended December 31, 2017.

In June 2017, we raised net proceeds of $6.0 million through the issuance of a secured convertible note to Pharmstandard International S.A., or Pharmstandard, a collaborator and our largest stockholder, in the aggregate principal amount of $6.0 million.

In August 2017, we entered into an agreement with Medpace, Inc., or Medpace, regarding $1.5 million in deferred fees that we owed Medpace for contract research and development services. Under the agreement we paid $0.85 million of the amount during the third quarter of 2017 and paid the balance in April 2018.

In September 2017, we entered into a satisfaction and release agreement, or the Invetech Satisfaction and Release Agreement, with Invetech Pty Ltd, or Invetech. Under the Invetech Satisfaction and Release Agreement, we agreed to make, issue and deliver to Invetech (i) a cash payment of $0.5 million, (ii) 57,142 shares of our common stock and (iii) an unsecured convertible promissory note in the original principal amount of $5.2 million on account of and in full satisfaction and release of all of our payment obligations to Invetech arising under our development agreement with Invetech, or the Invetech Development Agreement, prior to the date of the Invetech Satisfaction and Release Agreement, including our obligation to pay Invetech up to a total of $8.3 million in deferred fees, bonus payments and accrued interest.

In November 2017, we entered into a satisfaction and release agreement, or the Saint-Gobain Satisfaction and Release Agreement, with Saint-Gobain Performance Plastics Corporation, or Saint-Gobain. Under the Saint Gobain Satisfaction and Release Agreement, we agreed to make, issue and deliver to Saint-Gobain (i) a cash payment of $0.5 million, (ii) 34,499 shares of our common stock, (iii) an unsecured convertible promissory note in the original principal amount of $2.4 million, and (iv) certain specified equipment originally provided to us by Saint-Gobain under the development agreement with Saint-Gobain, or the Saint-Gobain Development Agreement, on account of and in full satisfaction and release of all of our payment obligations to Saint-Gobain arising under the Saint-Gobain Development Agreement, prior to the date of the Saint-Gobain Satisfaction and Release Agreement, including the development fees and charges. In connection with entering into the Saint-Gobain Satisfaction and Release Agreement, we and Saint-Gobain entered into an amendment to the Saint-Gobain Development Agreement to extend the term to December 31, 2019.

From June 2017 through December 31, 2017, we raised proceeds of $15.5 million through the issuance of common stock in an at-the-market offering under our original sales agreement with Cowen & Company, LLC, or Cowen. In February 2018, we amended and restated the original sales agreement with Cowen to increase the maximum aggregate offering price of the shares of our common stock which we may sell under the agreement from $30 million to up to $45 million. From December 31, 2017 through April 25, 2018, we raised an additional $7.5 million of proceeds. However, upon the delisting of our common stock from The Nasdaq Capital Market in April 2018, we ceased to sell any additional shares under the sales agreement.

In January 2018, we entered into a stock purchase agreement with Lummy (Hong Kong), Ltd., or Lummy HK, under which we agreed to issue and sell to Lummy HK in a private financing 375,000 shares of common stock for an aggregate purchase price of $1.5 million. In March 2018, we and Lummy HK amended the stock purchase agreement to reduce the aggregate price for the shares to $450,000. Concurrent with such amendment, we entered into a third amendment to our license agreement with Lummy HK pursuant to which Lummy HK agreed to pay us a $1.05 million milestone payment. The $450,000 payment for the shares of common stock and the $1.05 million milestone payment were received in April 2018.

On April 23, 2018, we received a notification from The Nasdaq Stock Market LLC indicating that, because we had indicated that we would be unable to meet the stockholders' equity requirement for continued listing as of the April 24, 2018 deadline that had been set by the Nasdaq Hearing Panel, the Nasdaq Hearing Panel determined to delist our common stock from The Nasdaq Capital Market and to suspend trading in our common stock effective at the open of business on April 25, 2018. Following such delisting, we transferred our common stock to the OTCQB® Venture Market.

As of September 30, 2018, we had cash and cash equivalents of $7.9 million. We do not currently have sufficient cash resources to pay all of our accrued obligations in full or to continue our business operations beyond the end of 2018.

Our consolidated financial statements have been prepared assuming that we will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. As of September 30, 2018, our current assets totaled $9.0 million compared with current liabilities of $9.4 million, and we had cash and cash equivalents of $7.9 million. Based upon our current and projected cash flow, we note there is substantial doubt about our ability to continue as a going concern within one year after the date that these financial statements are issued. The financial statements for the three and nine months ended September 30, 2018 do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from uncertainty related to our ability to continue as a going concern.

Prior to the termination of the development of rocapuldencel-T and the cessation of our research and development activities, we had devoted substantially all of our resources to our drug development efforts, including advancing our Arcelis precision immunotherapy technology platform, conducting clinical trials of our product candidates, protecting our intellectual property and providing general and administrative support for these operations. We have not generated any revenue from product sales and, to date, have funded our operations primarily through public offerings of our common stock and warrants, a venture loan, private placements of common stock, preferred stock and warrants, convertible debt financings, government contracts, government and other third party grants and license and collaboration agreements. From inception in May 1997 through September 30, 2018, we have raised a total of $526.0 million in cash, including:

- $360.7 million from the sale of our common stock, convertible debt, warrants and preferred stock;
- $32.9 million from the licensing of our technology;
- $107.4 million from government contracts, grants and license and collaboration agreements; and
- $25.0 million from the Loan Agreement with the Lenders.

We have incurred losses in each year since our inception in May 1997. Our net loss was $53.0 million and $40.6 million for the years ended December 31, 2016, and 2017, respectively and $13.6 million for the nine months ended September 30, 2018. As of September 30, 2018, we had an accumulated deficit of $386.2 million. Substantially all of our operating losses have resulted from costs incurred in connection with our development programs and from general and administrative costs associated with our operations.

In light of the termination of the development of rocapuldencel-T, cessation of our research and development activities and our cash resources, and based on a review of the status of our internal programs, resources and capabilities, we are pursuing a strategic alternative that may involve an asset sale, dissolution, liquidation, wind-down or protection under bankruptcy laws.. There can be no assurance that we will be able to enter into a strategic transaction on a timely basis, on terms that are favorable to us, or at all. If we decide to seek protection under the bankruptcy laws, and if we decided to wind down the company under the bankruptcy laws or otherwise, it is unclear to what extent we will be able to pay our obligations to creditors, and, whether and to what extent any resources will be available for distributions to our stockholders. However, based on our current resources, we believe that it is unlikely that any resources will be available for distributions to our stockholders and that a likely outcome of our wind-down and potential bankruptcy proceeding will be the cancellation or extinguishment of all outstanding shares in the company without any payment or other distribution on account of those shares.

NIH Funding

In September 2006, we entered into a multi-year research contract with the NIH and NIAID to design, develop and clinically test an autologous HIV immunotherapy capable of eliciting therapeutic immune responses. We have used funds from this contract to develop AGS-004, including to fund in full our Phase 2b clinical trial of AGS-004. On June 29, 2016, a contract modification was agreed to that extended the NIH and NIAID's commitment under the contract to July 31, 2018. We have agreed to a statement of work under the contract, and are obligated to furnish all the services, qualified personnel, material, equipment, and facilities not otherwise provided by the U.S. government needed to perform the statement of work. This contract expired as of July 31, 2018.

Under this contract, as amended, the NIH and NIAID committed to fund up to a total of $39.8 million, including reimbursement of direct expenses and allocated overhead and general and administrative expenses of up to $38.4 million and payment of other specified amounts totaling up to $1.4 million upon our achievement of specified development milestones. This amount includes a September 2014 modification of the contract under which the NIH and NIAID agreed to fund up to an additional $0.5 million to cover a portion of the manufacturing costs of the planned Phase 2 clinical trial of AGS-004 for long-term viral control in pediatric patients. Since September 2010, we have received reimbursement of our allocated overhead and general and administrative expenses at provisional indirect cost rates equal to negotiated provisional indirect cost rates agreed to with the NIH and NIAID in September 2010. These provisional indirect cost rates were subject to adjustment based on our actual costs pursuant to the agreement with the NIH and NIAID.

We have recorded revenue of $38.2 million through September 30, 2018 under the NIH and NIAID contract. This contract is the only arrangement under which we have generated substantial revenue.

Development and Commercialization Agreements

An important part of our business strategy has been to enter into arrangements with third parties both to assist in the development and commercialization of our product candidates, particularly in international markets, and to in-license product candidates in order to expand our pipeline.

Pharmstandard. In August 2013, in connection with the purchase of shares of our series E preferred stock by Pharmstandard, we entered into an exclusive royalty-bearing license agreement with Pharmstandard. Under this license agreement, we granted Pharmstandard and its affiliates a license, with the right to sublicense, to develop, manufacture and commercialize rocapuldencel-T and other products for the treatment of human diseases, which are developed by Pharmstandard using our individualized immunotherapy platform, in the Russian Federation, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine and Uzbekistan, which we refer to as the Pharmstandard Territory. We also provided Pharmstandard with a right of first negotiation for development and commercialization rights in the Pharmstandard Territory to specified additional products we may develop.

Under the terms of the license agreement, Pharmstandard licensed us rights to clinical data generated by Pharmstandard under the agreement and granted us an option to obtain an exclusive license outside of the Pharmstandard Territory to develop and commercialize improvements to our Arcelis technology generated by Pharmstandard under the agreement, a non-exclusive worldwide royalty-free license to Pharmstandard improvements to manufacture products using our Arcelis technology and a license to specified follow-on licensed products generated by Pharmstandard outside of the Pharmstandard Territory, each on terms to be negotiated upon our request for a license. In addition, Pharmstandard agreed to pay us pass-through royalties on net sales of all licensed products in the low single digits until it has generated a specified amount of aggregate net sales. Once the net sales threshold is achieved, Pharmstandard will pay us royalties on net sales of specified licensed products, including rocapuldencel-T, in the low double digits below 20%. These royalty obligations last until the later of the expiration of specified licensed patent rights in a country or the twelfth anniversary of the first commercial sale in such country on a country by country basis and no further royalties on specified other licensed products. After the net sales threshold is achieved, Pharmstandard has the right to offset a portion of the royalties Pharmstandard pays to third parties for licenses to necessary third party intellectual property against the royalties that Pharmstandard pays to us.

The agreement will terminate upon expiration of the royalty term, upon which all licenses will become fully paid up perpetual exclusive licenses. Either party may terminate the agreement for the other party's uncured material breach or if specified conditions occur relating to the other party's insolvency or bankruptcy and we may terminate the agreement if Pharmstandard challenges or assists a third party in challenging specified patent rights of ours. If Pharmstandard terminates the agreement upon our material breach or bankruptcy, Pharmstandard is entitled to terminate our licenses to improvements generated by Pharmstandard, upon which we may come to rely for the development and commercialization of rocapuldencel-T and other licensed products outside of the Pharmstandard Territory, and Pharmstandard is entitled to retain its licenses from us and to pay us substantially reduced royalty payments following such termination.

In November 2013, we entered into an agreement with Pharmstandard under which Pharmstandard purchased shares of our series E preferred stock. Under this agreement, we agreed to enter into a manufacturing rights agreement for the European market with Pharmstandard and that the manufacturing rights agreement would provide for the issuance of warrants to Pharmstandard to purchase 24,989 shares of our common stock at an exercise price of $116.40 per share. As of November 17, 2018, we had not entered into this manufacturing rights agreement or issued the warrants.

Pharmstandard and Actigen. On February 1, 2018, we entered into an option agreement with Pharmstandard and Actigen Limited, or Actigen, under which we obtained an exclusive option to license certain patent rights and know-how related to a group of fully human PD1 monoclonal antibodies and related technology held by Actigen. Actigen previously granted Pharmstandard an option to exclusively license these patent rights. Under the option agreement, Pharmstandard granted to us an exclusive license for evaluation purposes only to make, have made, use and import the PD1 monoclonal antibodies covered by these patent rights (but not offer to sell or sell products and processes covered by or incorporating the patent rights) for a period of one year from the date of the agreement and an option exercisable during the option exercise period to obtain an exclusive license (with the right to sublicense) under the patent rights to make, have made, use, offer for sale, sell and import (with a right to grant sublicenses) the PD1 monoclonal antibodies for all prophylactic, therapeutic and diagnostic uses and for all human diseases and conditions in the United States and Canada. The parties have agreed that, if we exercise the option during the option exercise period, the parties will negotiate in good faith a license agreement, on the terms and conditions outlined in the option agreement, including payments by us to Pharmstandard of an upfront license fee of $3.6 million, payable upon execution of the license agreement in our common stock, various development and regulatory milestone payments totaling $8.5 million, and upper single digit percentage royalties on net sales of any pharmaceutical product or therapeutic regimen incorporating the licensed PD1 monoclonal antibodies that will apply on a country-by-country basis until the later of the last to expire patent or ten years from the date of first commercial sale, against which the first $5.0 million of our development expenditures will be credited as prepaid royalties.

In consideration for the rights granted under the option agreement, we issued 169,014 shares of our common stock to Pharmstandard the value of which will be creditable against the upfront license fee of $3.6 million payable under the option agreement if we enter into a license agreement. Unless earlier terminated by any party for uncured material breach or by us without cause upon thirty days prior written notice, the option agreement will terminate upon the later of the end of the option exercise period if we decide not to exercise the option or sixty days after we exercise the option.

Green Cross. In July 2013, in connection with the purchase of our series E preferred stock by Green Cross Corp., or Green Cross, we entered into an exclusive royalty-bearing license agreement with Green Cross. Under this agreement we granted Green Cross a license to develop, manufacture and commercialize rocapuldencel-T for mRCC in South Korea. We also provided Green Cross with a right of first negotiation for development and commercialization rights in South Korea to specified additional products we may develop.

Under the terms of the license, Green Cross has agreed to pay us $0.5 million upon the initial submission of an application for regulatory approval of a licensed product in South Korea, $0.5 million upon the initial regulatory approval of a licensed product in South Korea and royalties ranging from the mid-single digits to low double digits below 20% on net sales until the fifteenth anniversary of the first commercial sale in South Korea. In addition, Green Cross has granted us an exclusive royalty free license to develop and commercialize all Green Cross improvements to our licensed intellectual property in the rest of the world, excluding South Korea, except that, as to such improvements for which Green Cross makes a significant financial investment and that generate significant commercial benefit in the rest of the world, we are required to negotiate in good faith a reasonable royalty that we will be obligated to pay to Green Cross for such license. Under the terms of the agreement, we are required to continue to develop and to use commercially reasonable efforts to obtain regulatory approval for rocapuldencel-T in the United States.

The agreement will terminate upon expiration of the royalty term, which is 15 years from the first commercial sale, upon which all licenses will become fully paid up perpetual non-exclusive licenses. Either party may terminate the agreement for the other party's uncured material breach or if specified conditions occur relating to the other party's insolvency or bankruptcy and we may terminate the agreement if Green Cross challenges or assists a third party in challenging specified patent rights of ours. If Green Cross terminates the agreement upon our material breach or bankruptcy, Green Cross is entitled to terminate our licenses to improvements and retain its licenses from us and to pay us substantially reduced milestone and royalty payments following such termination.

Medinet. In December 2013, we entered into a license agreement with Medinet. Under this agreement, we granted Medinet an exclusive, royalty-free license to manufacture in Japan rocapuldencel-T and other products using our Arcelis technology solely for the purpose of the development and commercialization of rocapuldencel-T and these other products for the treatment of mRCC. We refer to this license as the manufacturing license. In addition, under this agreement, we granted Medinet an option to acquire a nonexclusive, royalty-bearing license under our Arcelis technology to sell in Japan rocapuldencel-T and other products for the treatment of mRCC. We refer to the option as the sale option and the license as the sale license.

The sale option expired on April 30, 2016. As a result, Medinet has only retained the manufacturing license and may only manufacture rocapuldencel-T and these other products for us or our designee. We have agreed to negotiate in good faith a supply agreement under which Medinet would supply us or our designee with rocapuldencel-T and these other products for development and sale for the treatment of mRCC in Japan. During the term of the manufacturing license, we may not manufacture rocapuldencel-T or these other products for us or any designee for development or sale for the treatment of mRCC in Japan.

In consideration for the manufacturing license, Medinet paid us $1.0 million. Medinet also loaned us $9.0 million in connection with us entering into the agreement. We have agreed to use these funds in the development and manufacturing of rocapuldencel-T and the other products. Medinet also agreed to pay us milestone payments of up to a total of $9.0 million upon the achievement of developmental and regulatory milestones and $5.0 million upon the achievement of a sales milestone related to rocapuldencel-T and these products.

We borrowed the $9.0 million pursuant to an unsecured promissory note that bears interest at a rate of 3.0 % per annum. The principal and interest under the note are due and payable on December 31, 2018. Under the terms of the note and the manufacturing license agreement, any milestone payments related to the developmental and regulatory milestones that become due will be applied first to the repayment of the loan. We have achieved $5.0 million in milestones. As a result, the outstanding principal of the loan as of February 1, 2018 has been reduced to $4.0 million. We have the right to prepay the loan at any time. If we have not repaid the loan by December 31, 2018, then we have agreed to grant to Medinet a non-exclusive, royalty-bearing license to make and sell Arcelis products in Japan for the treatment of cancer. In such event, the amounts owing under the loan as of December 31, 2018 may constitute pre-paid royalties under the license or would be due and payable. We do not expect to pay the amounts owing under the loan by December 31, 2018. Royalties under this license would be paid until the expiration of the licensed patent rights in Japan at a rate to be negotiated. If we cannot agree on the royalty rate, we have agreed to submit the matter to arbitration.

Under the agreement, we had the right to revoke both the manufacturing license and the sale license to be granted to Medinet or the sale license only. In February 2018, we notified Medinet that we irrevocably agreed to have no further right to exercise our right under the license agreement to revoke the manufacturing and the sale license, or the sale license only. As a result of our decision to forego these revocation rights, during the three months ended March 31, 2018, we recognized as revenue $5.8 million of milestone payments that had previously been received and recorded as deferred revenue.

The agreement will terminate upon expiration of the royalty term, upon which all licenses will become fully paid up, perpetual non-exclusive licenses. Either party may terminate the agreement for the other party's uncured material breach or if specified conditions occur relating to the other party's insolvency or bankruptcy, and we may terminate the agreement if Medinet challenges or assists a third party in challenging specified patent rights of ours. If Medinet terminates the agreement upon our material breach or bankruptcy, Medinet is entitled to terminate our licenses to improvements and retain its royalty-bearing licenses from us.

Lummy. On April 7, 2015, we and Lummy HK, entered into a license agreement pursuant to which we granted to Lummy HK an exclusive license under the Arcelis technology, including patents, know-how and improvements to manufacture, develop and commercialize products for the treatment of cancer in China, Hong Kong, Taiwan and Macau. Lummy HK also has a right of first negotiation with respect to a license under the Arcelis technology for the treatment of infectious diseases in China, Hong Kong, Taiwan and Macau. This agreement was subsequently amended in December 2016, October 2017 and March 2018.

Under the terms of the license agreement, the parties will share relevant data, and we will have a right to reference Lummy HK data for purposes of its development programs under the Arcelis technology. In addition, Lummy HK has granted to us an exclusive, royalty-free license under and to any and all Lummy HK improvements to the Arcelis technology conceived or reduced to practice by Lummy HK and Lummy HK data to develop and/or commercialize products outside China, Hong Kong, Taiwan and Macau, an exclusive, royalty-free license under and to any and all investigational new drugs, or INDs, and other regulatory approvals and Lummy HK trademarks used for an Arcelis-based product to develop and/or commercialize an Arcelis-based product outside China, Hong Kong, Taiwan and Macau and a non-exclusive, worldwide, royalty-free license under any Lummy HK improvements and Lummy HK data to manufacture Arcelis-based products anywhere in the world. Lummy HK has the right to reference our data, INDs and other regulatory filings and submissions for the purpose of developing and obtaining regulatory approval of licensed products in China, Hong Kong, Taiwan and Macau.

Pursuant to the license agreement, Lummy HK will pay us royalties on net sales and an aggregate of up to $22.3 million upon the achievement of manufacturing, regulatory and commercial milestones. On October 18, 2017, we entered into a second amendment to the license agreement and Lummy HK paid us $1.5 million upon the achievement of a manufacturing milestone in October 2017. On March 23, 2018, we entered into a third amendment to the license agreement pursuant to which Lummy agreed to pay us a $1.05 million milestone. Lummy also agreed to purchase 375,000 shares of our common stock for a purchase price of $450,000 pursuant to an amended stock purchase agreement. We received payments for the achievement of this milestone and for the purchase of these shares of common stock in April 2018.

Of the potential $22.3 million in milestone payments, to date we have earned $2.55 million, of which we received $1.5 million as of March 31, 2018, and $1.05 million in April 2018. The license agreement will terminate upon expiration of the last to expire royalty term for all Arcelis-based products, with each royalty term being the longer of the expiration of the last valid patent claim covering the applicable Arcelis-based product and 10 years from the first commercial sale of such Arcelis-based product. Either party may terminate the license agreement for the other party's uncured material breach or if specified conditions occur relating to the other party's insolvency or bankruptcy. We may terminate the license agreement if Lummy HK challenges or assists a third party in challenging specified patent rights of ours. If Lummy HK terminates the license agreement upon our material breach or bankruptcy, Lummy HK is entitled to terminate the licenses it granted to us and retain its licenses from us with respect to Arcelis-based products then in development or being commercialized, subject to Lummy HK's continued obligation to pay royalties and milestones with respect to such Arcelis-based products.

Invetech. In October 2014, we entered into the Invetech Development Agreement. Under the Invetech Development Agreement, Invetech had agreed to continue to develop and provide prototypes of the automated production system to be used for the manufacture of our Arcelis-based products. Subsequent to signing the Invetech Development Agreement, Invetech agreed to defer 30% of its fees, up to $5.0 million subject to payments by us in installments over 2017 and 2018.

On September 22, 2017, we entered into the Invetech Satisfaction and Release Agreement. Under the Invetech Satisfaction and Release Agreement, we agreed to make, issue and deliver to Invetech (i) a cash payment of $0.5 million (ii) 57,142 shares of our common stock and (iii) an unsecured convertible promissory note in the original principal amount of $5.2 million on account of and in full satisfaction and release of all of our payment obligations to Invetech arising under the Invetech Development Agreement prior to the date of the Invetech Satisfaction and Release Agreement, including our obligation to pay Invetech up to a total of $8.3 million in deferred fees, bonus payments and accrued interest.

Although we currently have no ongoing activities under the Invetech Development Agreement, the term of the Invetech Development Agreement will continue until the completion of the development of the production systems. The Invetech Development Agreement can be terminated early by either party because of a technical failure or by us without cause. We own all intellectual property arising from the development services with the exception of existing Invetech intellectual property incorporated therein-under which we have a license.

Saint-Gobain. In January 2015, we entered into the Saint-Gobain Development Agreement, that was subsequently amended in 2015, 2016 and 2017. Under the Saint-Gobain Development Agreement, Saint-Gobain agreed to develop a range of disposables for use in our automated production systems to be used for the manufacture of our Arcelis-based products. The Saint-Gobain agreement requires the parties to execute a commercial supply agreement under which Saint-Gobain would become the exclusive supplier of disposables for the manufacture of our products treating solid tumors for no less than fifteen years. The Saint-Gobain agreement will continue until December 31, 2019, but can be terminated by written agreement of the parties because of a material default, including the failure to execute the commercial supply agreement, or a failure to achieve a performance milestone.

On November 22, 2017, we entered into the Saint-Gobain Satisfaction and Release Agreement. Under the Saint-Gobain Satisfaction and Release Agreement, we agreed to make, issue and deliver to Saint-Gobain (i) a cash payment of $0.5 million, (ii) 34,499 shares of our common stock (iii) an unsecured convertible promissory note in the original principal amount of $2.4 million, and (iv) certain specified equipment originally provided to us under the development agreement, on account of and in full satisfaction and release of all payment obligations to Saint-Gobain arising under the development agreement, including the development fees and charges owed by us to Saint-Gobain.

Cellscript. In December 2015, we entered into a development and supply agreement with Cellscript, LLC, or Cellscript. Under the agreement, Cellscript agreed to develop cGMP processes for the manufacture and production of CD40L RNA, a ribonucleic acid used in the production of our Arcelis-based products, and to manufacture and produce CD40L RNA.

In consideration for these development and production services, we agreed to pay Cellscript total fees of $4.6 million. Upon the execution of the agreement, we made an initial payment to Cellscript of $2.1 million through the issuance to Cellscript of 45,309 shares of our common stock. The balance of the fees was payable to Cellscript, at our option, in cash, common stock or a combination of cash and common stock upon the achievement of development milestones. Any shares of common stock issued pursuant to the agreement are subject to a lock-up period of 180 days from the date of issuance of such shares to Cellscript.

Under the terms of the agreement, Cellscript was to be the sole and exclusive manufacturer and supplier to us of CD40L RNA, and we had agreed upon cash payments to Cellscript for CD40L RNA produced for us during the term of the agreement. Under the agreement, Cellscript was to be our sole and exclusive supplier of enzymes and various kits comprising enzymes for transcription, capping and/or polyadenylation of RNA. We had agreed upon cash payments to Cellscript for each kit that is purchased under the agreement.

The agreement expired on June 30, 2018. As of September 30, 2018, we accrued $2.0 million of total fees for development and production services performed by Cellscript under the development and supply agreement prior to termination of the agreement.

Manufacturing

We currently have a manufacturing suite located at our Technology Drive leased facility in Durham, North Carolina. However, we have determined to cease the manufacture of Arcelis-based product candidates. Primarily due to our decision to cease support for the Phase 2 trial of AGS-004 for the eradication of HIV, we elected to close our Patriot Center facility, a manufacturing facility we previously leased in Durham, North Carolina, during the second quarter of 2018.

In January 2017, we entered into a ten-year lease agreement with two five-year renewal options for 40,000 square feet of manufacturing and office space at the Center for Technology Innovation, or CTI, on the Centennial Campus of North Carolina State University in Raleigh, North Carolina. We provided a security deposit in the amount of $2.4 million as security for obligations under the lease agreement, which was provided in the form of a letter of credit. We had intended to utilize this facility to manufacture rocapuldencel-T to support submission of a biologics license application, or BLA, to the FDA and to support initial commercialization of rocapuldencel-T.

To provide for capacity expansion beyond the initial few years following potential launch of rocapuldencel-T, we also had planned to build-out and equip a second facility, which we refer to as the Centerpoint facility. In August 2014, we entered into a ten-year lease agreement with renewal options. Under the lease agreement, we agreed to lease certain land and an approximately 125,000 square-foot building to be constructed in Durham County, North Carolina. We initially intended this facility to house our corporate headquarters and commercial manufacturing before we entered into the lease for the Center for Technology Innovation, or CTI, facility. The shell of the new facility was constructed on a build-to-suit basis in accordance with agreed upon specifications and plans and was completed in June 2015. However, the build-out and equipping of the interior of the facility was suspended as we pursued financing arrangements to support the further build out of the facility.

Due to the recommendation of the IDMC in February 2017 to discontinue the ADAPT trial, we reassessed our manufacturing plans. In March 2017, we entered into a lease termination agreement with the landlord of our CTI facility terminating the lease as of March 17, 2017. From the $2.4 million letter of credit, the landlord drew down $0.7 million to cover unpaid construction costs in March 2017 and $1.7 million in April 2017 for lease termination damages and agreed to return $0.1 million in consideration for being able to salvage some of the construction costs. Pursuant to the lease termination agreement, we have no further obligations under the lease. During the year ended December 31, 2017, we recorded a lease termination fee of $1.6 million that is included in restructuring costs on the statement of operations. We also recorded an impairment loss on Construction-in-progress on the property of $0.9 million during the year ended December 31, 2017.

In November 2017, we and TKC Properties, the landlord of the Centerpoint facility, entered into a lease termination agreement terminating the lease agreement as of November 21, 2017. In addition, TKC Properties completed the sale of the facility to a third party and we received cash proceeds of approximately $1.8 million. As of December 31, 2017, we recorded $0 for the Centerpoint facility and $0 for the lease liability. Additionally, we are no longer required to maintain restricted cash of approximately $0.7 million as a security deposit.

Results of Operations

Comparison of the Three and Nine Months Ended September 30, 2017 with the Three and Nine Months Ended September 30, 2018

The following table summarizes the results of our operations for each of the three and nine month periods ended September 30, 2017 and 2018, together with the changes in those items in dollars and as a percentage:

	Three Months Ended September 30,		$	%	Nine Months Ended September 30,		$	%
	2017	2018	Change	Change	2017	2018	Change	Change
	(in thousands)							
Revenue	$ 53	$ 1,247	$ 1,194	*	$ 228	$ 7,234	$ 7,006	*
Operating expenses								
Research and development	4,550	3,325	(1,226)	(26.9)%	17,585	12,794	(4,791)	(27.2)%
General and administrative	2,879	3,015	136	4.7%	9,522	8,010	(1,512)	(15.9)%
Impairment of property and equipment	—	—	—	—	27,204	—	(27,204)	(100.0)%
Restructuring costs	679	—	(679)	(100.0)%	6,032	—	(6,032)	(100.0)%
Total operating expenses	8,108	6,340	(1,769)	(21.8)%	60,343	20,804	(39,539)	(65.5)%
Loss from operations	(8,055)	(5,093)	2,962	36.8%	(60,115)	(13,569)	46,545	77.4%
Interest income	11	24	13	119.2%	50	62	12	23.1%
Interest expense	(67)	(166)	(98)	(146.5)%	(1,090)	(467)	623	57.2%
Gain on early extinguishment of debt	1,507	282	(1,225)	81.3%	1,756	282	(1,475)	84.0%
Change in fair value of warrant liability	502	—	(502)	100.0%	20,682	168	(20,514)	99.2%
Other expense	36	(48)	(85)	*	31	(66)	(98)	*
Net loss	$ (6,066)	$ (5,001)	$ 1,065	17.6%	$ (38,685)	$ (13,591)	$ 25,094	64.9%

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* Not meaningful

Revenue

To date, we have not generated revenue from the sale of any products. Substantially all of our revenue has been derived from our NIH and NIAID contract and our license agreements with Medinet and Lummy HK.

Revenue was $1.25 million for the three months ended September 30, 2018, compared with $53,000 for the three months ended September 30, 2017, an increase of $1.2 million. The increase for the three months ended September 30, 2018 compared with the three months ended September 30, 2017 primarily resulted from the recognition of a $1.1 million milestone payment previously recorded as deferred revenue under the collaboration agreement with Lummy HK.

Revenue was $7.2 million for the nine months ended September 30, 2018, compared with $0.2 million for the nine months ended September 30, 2017, an increase of $7.0 million. The increase for the nine months ended September 30, 2018 compared with the nine months ended September 30, 2017 resulted from the recognition of $5.9 million of revenue from milestone payments from Medinet that had previously been recorded as deferred revenue as a result of our decision to irrevocably forego our revocation right under our license agreement with Medinet and the recognition of a $1.1 million milestone payment previously recorded as deferred revenue under the collaboration agreement with Lummy HK.

Research and Development Expenses

Since our inception in 1997, we focused our resources on our research and development activities, including conducting preclinical studies and clinical trials, manufacturing development efforts and activities related to regulatory filings for our product candidates. We recognize our research and development expenses as they are incurred. Our research and development expenses consist primarily of:

- salaries and related expenses for personnel in research and development functions;
- fees paid to consultants and clinical research organizations, or CROs, including in connection with our clinical trials, and other related clinical trial fees, such as for investigator grants, patient screening, laboratory work and statistical compilation and analysis;
- commercial manufacturing development consisting of costs incurred under our development agreement with Invetech under which Invetech has agreed to develop and provide prototypes of the automated production system to be used for the manufacture of our Arcelis-based products;
- allocation of facility lease and maintenance costs;
- costs incurred under our development agreement with Saint-Gobain to develop a range of disposables for use in the automated production system;
- depreciation of leasehold improvements, laboratory equipment and computers;
- costs related to production of product candidates for clinical trials;
- costs related to compliance with regulatory requirements;
- consulting fees paid to third parties related to non-clinical research and development;
- costs related to stock options or other share-based compensation granted to personnel in research and development functions; and
- acquisition fees, license fees and milestone payments related to acquired and in-licensed technologies.

The table below summarizes our direct research and development expenses by program for the periods indicated. Our direct research and development expenses consist principally of external costs, such as fees paid to investigators, consultants, central laboratories and CROs, including in connection with our clinical trials, and related clinical trial fees. Research and development expenses also include commercial manufacturing development costs consisting primarily of costs incurred under our Invetech Development Agreement to develop and provide prototypes of the automated production system to be used for the manufacture of our Arcelis-based products and our Saint-Gobain Development Agreement to develop a range of disposables to be used in both our manual and automated manufacturing processes. We had been developing rocapuldencel-T and AGS-004 in parallel, and typically use our employee and infrastructure resources across multiple research and development programs. We do not allocate salaries, share-based compensation, employee benefit or other indirect costs related to our research and development function to specific product candidates. Those expenses are included in "Indirect research and development expense" in the table below.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2018	2017	2018
	(in thousands)			
Direct research and development expense by program:				
Rocapuldencel-T	$ 1,175	$ 1,086	$ 5,729	$ 4,655
AGS-004	25	6	102	31
Total direct research and development program expense	1,200	1,092	5,831	4,686
Commercial manufacturing development expense	—	—	(373)	—
Indirect research and development expense	3,350	2,233	12,127	8,108
Total research and development expense	$ 4,550	$ 3,325	$ 17,585	$ 12,794

Three months ended September 30, 2017 and 2018.

Research and development expenses were $3.3 million for the three months ended September 30, 2018, compared with $4.6 million for the three months ended September 30, 2017, a decrease of $1.2 million, or 26.9%. The decrease in research and development expense reflects a $0.1 million decrease in direct research and development expense and a $1.1 million decrease in indirect research and development expense.

Direct research and development expense for rocapuldencel-T was $1.1 million in the three months ended September 30, 2018, compared with $1.2 million for the three months ended September 30, 2017, a decrease of $0.1 million. This decrease reflects a reduction of costs for the ADAPT trial following the termination of this trial in April 2018.

Direct research and development expense for AGS-004 was not significantly different in the three months ended September 30, 2018 compared with the three months ended September 30, 2017.

The decrease in indirect research and development expense was primarily due to the reduction in the size of our workforce engaged in research and development activities. As of September 30, 2018, we had 15 employees engaged in such activities, compared with 29 employees engaged in such activities as of September 30, 2017.

Nine Months ended September 30, 2017 and 2018.

Research and development expenses were $12.8 million for the nine months ended September 30, 2018, compared with $17.6 million for the nine months ended September 30, 2017, a decrease of $4.8 million, or 27.2%. The decrease in research and development expense reflects a $1.1 million decrease in direct research and development expense and a $4.0 million decrease in indirect research and development expense, partially offset by a credit of $0.4 million during the nine months ended September 30, 2017 related to our Saint Gobain Development Agreement.

The decrease in direct research and development expenses for rocapuldencel-T and AGS-004 resulted primarily from the following:

- Direct research and development expense for rocapuldencel-T decreased to $4.7 million in the nine months ended September 30, 2018 from $5.7 million for the nine months ended September 30, 2017. This decrease primarily reflects a reduction of costs for the ADAPT trial following the termination of this trial in April 2018.

- Direct research and development expense with respect to AGS-004 was not significantly different in the nine months ended September 30, 2018 compared with the nine months ended September 30, 2017.

During the nine months ended September 30, 2017, we recorded a credit of $0.4 million related to amounts owed under our Saint-Gobain Development Agreement, which we recorded as a reduction of research and development expense. No commercial manufacturing development expense was recorded for the nine months ended September 30, 2018.

The decrease in indirect research and development expense was primarily due to the reduction in the size of our workforce engaged in research and development activities, as noted above.

The successful development of any product candidate is highly uncertain. Even if we resume our research and development activities, at this time we cannot reasonably estimate the nature, timing or costs of the efforts that will be necessary to complete the development of any product candidate, or the period, if any, in which material net cash inflows from such product candidates may commence. This is due to the numerous risks and uncertainties associated with developing drugs, including the uncertainty of:

- the scope, rate of progress, expense and results of our ongoing clinical trials;
- the scope, rate of progress, expense and results of additional clinical trials that we may conduct;
- the scope, rate of progress, expense and results of our commercial manufacturing development efforts;
- other research and development activities; and
- the timing of regulatory approvals.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. If the FDA or another regulatory authority were to require additional clinical trials or if there were significant delays in enrollment, significant additional financial resources and time would be expended on the completion of clinical development.

General and Administrative Expenses

General and administrative expenses were $3.0 million for the three months ended September 30, 2018, compared with $2.9 million for the three months ended September 30, 2017, an increase of $0.1 million or 4.7%. This increase was primarily due to an increase in legal expenses.

General and administrative expenses were $8.0 million for the nine months ended September 30, 2018, compared with $9.5 million for the nine months ended September 30, 2017, a decrease of $1.5 million or 15.9%. This decrease was primarily due to a reduction in personnel costs consisting primarily of salaries and stock-based compensation.

General and administrative expenses consist primarily of salaries and related costs for employees in executive, operational and finance, information technology and human resources functions. Other significant general and administrative expenses include allocation of facilities costs, professional fees for accounting and legal services and expenses associated with obtaining and maintaining patents.

Impairment Loss on Property and Equipment

We did not recognize an impairment loss on property and equipment for the three and nine months ended September 30, 2018, and the three months ended September 30, 2017. We recognized an impairment loss on property and equipment of $27.2 million for the nine months ended September 30, 2017. We review our property and equipment for impairment whenever events or changes indicate its carrying value may not be recoverable.

Impairment of Centerpoint Facility and Construction-in-Progress

We determined during the nine months ended September 30, 2017 that we no longer planned to develop our Centerpoint facility. Accordingly, we recorded an impairment loss of $18.3 million for the Construction-in-progress on the property.

Additionally, we determined during the nine months ended September 30, 2017 that we would no longer need to develop various equipment included in Construction-in-progress under our current manufacturing plans. As such, we entered into agreements and understandings with various vendors to attempt to sell or dispose this equipment at prices less than our carrying value. Accordingly, we determined that the fair value of this equipment held for sale was $0.7 million as of March 31, 2017 and recorded an impairment loss of $1.1 million as of March 31, 2017. Additionally, we recorded a $6.1 million impairment loss on other equipment included in Construction-in-progress that had to be abandoned or had no net realizable value. Finally, we recorded an impairment loss of $0.9 million on Construction-in-progress that was abandoned at the CTI facility.

Impairment of Capital Leases

In August 2016, we entered into two agreements, or the Power Generation Agreements, with an electric utility company. The Power Generation Agreements were accounted for as capital leases for financial reporting purposes. Under the lease agreements, the electric utility company agreed to design, procure, install, own and maintain electrical equipment at Centerpoint to provide required electrical loads. Property, plant and equipment included $2.4 million as of December 31, 2016 under the Power Generation Agreements in the Construction-in-progress account. As of September 30, 2017, $2.2 million of these assets were classified as Assets held for sale on our Balance Sheet. Since the capital leases are for electrical equipment held for sale on the Centerpoint property, we recorded an impairment loss of $0 and $0.1 million during the three and nine months ended September 30, 2017, respectively.

Restructuring Costs

We recognized restructuring costs of $0.6 million and $6.0 million during the three and nine months ended September 30, 2017, respectively, compared with $0 during the three and nine months ended September 30, 2018, respectively. The restructuring costs during the three and nine months ended September 30, 2017 were related to the restructuring of our operations following the recommendation by the IDMC to discontinue the ADAPT trial in February 2017.

Workforce Action Plan

On March 10, 2017, we enacted a workforce action plan designed to streamline operations and reduce our operating expenses. Under this plan, we reduced our workforce by 61 employees during the nine months ended September 30, 2017. During the three and nine months ended September 30, 2017, we recognized $0.1 million and $1.2 million in severance costs, respectively, and $0.6 and $3.2 million in stock compensation cost, respectively, from the acceleration of vesting of stock options held by the terminated employees. Through additional targeted reductions and attrition, the workforce was further reduced to 21 employees as of September 30, 2018.

CTI Lease Agreement

In January 2017, we entered into a ten-year lease agreement with two five-year renewal options for 40,000 square feet of manufacturing and office space at CTI on the Centennial Campus of North Carolina State University in Raleigh, North Carolina. We provided a security deposit in the amount of $2.4 million as security for obligations under the lease agreement, which was provided in the form of a letter of credit. In March 2017, we initiated discussions with the landlord of the CTI facility regarding the termination of this lease.

In March 2017 the landlord of our CTI facility notified us that it was terminating the lease due to nonpayment of invoices for up-fit costs, effective immediately. On March 31, 2017, we entered into a termination agreement with the landlord terminating the lease as of March 17, 2017. From the $2.4 million letter of credit, the landlord drew down $0.7 million to cover unpaid construction costs in March 2017 and $1.7 million in April 2017 for lease termination damages and agreed to return $0.1 million in consideration for being able to salvage some of the construction costs. Pursuant to the termination agreement, we have no further obligations under the lease. During the three and nine months ended September 30, 2017, we recorded a lease termination fee of $0 and $1.6 million, respectively, which is included in Restructuring costs on the statement of operations. We also recorded an impairment loss on Construction-in-progress on the property of $0 and $0.9 million during the three and nine months ended September 30, 2017, respectively.

Interest Expense

Interest expense was $0.2 million for the three months ended September 30, 2018, compared with $0.1 million for the three months ended September 30, 2017, an increase of $0.1 million or 146.5%. The increase primarily resulted from the reversal of accrued interest during the three months ended September 30, 2017 associated with the recognition of a milestone payment against the Medinet Note.

Interest expense was $0.5 million for the nine months ended September 30, 2018, compared with $1.1 million for the nine months ended September 30, 2017, a decrease of $0.6 million or 57.2%. The decrease resulted primarily from our repayment of the balance outstanding under the Loan Agreement on March 6, 2017 and the termination of the Power Generation Agreements in November 2017 that were accounted for as capital leases.

Gain on Early Extinguishment of Debt

We recognized a gain on early extinguishment of debt of $1.5 million and $1.8 million for the three and nine months ended September 30, 2017, respectively, compared with $0.3 million for each of the three and nine months ended September 30, 2018. On March 3, 2017, we entered into a payoff letter with the Lenders, pursuant to which we paid on March 6, 2017, a total of $23.1 million to the Lenders, representing the principal balance and accrued interest outstanding under the Loan Agreement in repayment of our outstanding obligations under the Loan Agreement. In addition, we issued to the Lenders five year warrants to purchase an aggregate of 5,000 shares of our common stock at an exercise price of $26.00 per share in consideration of the Lenders accepting the $23.1 million as repayment in full. During the three and nine months ended September 30, 2018, we recognized a gain on early extinguishment of debt of $0.3 million for forgiveness of debt on our convertible note with Invetech.

Change in Fair Value of Warrant Liability

The gain from the change in fair value of the warrant liability was $0 and $0.2 million for the three and nine months ended September 30, 2018, respectively, compared with $0.5 million and $20.7 million for the three and nine months ended September 30, 2017, respectively. These amounts represent the change in the fair value of our warrant liability for the warrants issued in August 2016. The August 2016 warrants contain provisions that could require cash settlement and are recorded as a liability at fair value on the date of issuance and as of the end of each reporting period. The fair value of the August 2016 warrants declined primarily due to a significant decline in the price of our common stock and a shorter expected life of the warrants. As of September 30, 2018, the fair value of the August 2016 warrants was $0.

Liquidity and Capital Resources

Sources of Liquidity

As of September 30, 2018, we had cash and cash equivalents of $7.9 million.

Since our inception in May 1997 through September 30, 2018, we have funded our operations principally with $360.7 million from the sale of common stock, convertible debt, warrants and preferred stock, $32.9 million from the licensing of our technology, $107.4 million from government contracts, grants and license and collaboration agreements, and $25.0 million from the Loan Agreement.

Troubled Debt Restructuring with Invetech. As of June 30, 2017, we had recorded a manufacturing research and development obligation payable to Invetech on our consolidated balance sheet of $8.3 million, representing $5.2 million in deferred fees, $2.3 million in estimated bonus payments and $0.7 million in accrued interest. On September 22, 2017, we entered into the Invetech Satisfaction and Release Agreement. Under the Invetech Satisfaction and Release Agreement, we agreed to make, issue and deliver to Invetech (i) a cash payment of $0.5 million, (ii) 57,142 shares of our common stock and (iii) an unsecured convertible promissory note in the original principal amount of $5.2 million on account of and in full satisfaction and release of all of our payment obligations to Invetech arising under the Invetech Development Agreement prior to the date of the Invetech Satisfaction and Release Agreement, including our obligation to pay Invetech up to a total of $8.3 million in deferred fees, bonus payments and accrued interest.

The maturity date for the payment of principal and interest under the note is September 30, 2020. The note bears interest at a rate of 6.0% per annum, which interest will compound annually. For the quarterly periods ended December 31, 2017, March 31, 2018, June 30, 2018 and September 30, 2018, we paid Invetech $200,000, $200,000, $150,000 and $150,000, respectively, in cash under the note. For the fiscal quarters ending December 31, 2018 through March 31, 2019, we are required to make quarterly installment payments under the note, each in an aggregate amount of up to $0.3 million, consisting of (i) cash in the amount of $150,000 and (ii) if certain specified conditions are met as of the corresponding payment date, up to $150,000 of shares of our common stock. For the fiscal quarters ending June 30, 2019 through June 30, 2020, we are required to make quarterly installment payments under the note, each in an amount of $150,000, payable in cash. Subject to Invetech's conversion rights, we may prepay the note in full or in part at any time without penalty or premium.

The note also provides that on the anniversary of the issue date of the note for each of the first three years following the issue date, the outstanding principal amount of the note, if any, plus accrued and unpaid interest thereon shall automatically be deemed to be reduced by $250,000, if and only if we have paid all debt service payments due under the note on or prior to the relevant anniversary date and no event of default, fundamental transaction or change of control, each as defined in the note, has occurred on or prior to such anniversary date. As a result, on September 21, 2018, the anniversary of the issue date of the note, the outstanding principal amount of the note was automatically reduced by $250,000.

Upon maturity of the note or at any time within 75 days of such maturity, or upon the occurrence of certain events of default, Invetech may, at its option, elect to convert any amount of the outstanding principal and accrued interest into shares of our common stock. Upon a change of control pursuant to which Invetech has a redemption right, Invetech may, at its option, elect to convert any amount of the outstanding principal and accrued interest, less any remaining installment payments required to be made in cash, into shares of our common stock. We will be required to pay any amount not so converted in cash. Upon the occurrence of certain events of default, Invetech may, at its option, elect to convert any amount of the outstanding principal and accrued interest into shares of our common stock. We will be required to pay any amount not so converted in cash. In each case, the number of shares of common stock issuable upon such complete or partial conversion of the note is determined by dividing the portion of the principal and accrued or unpaid interest to be converted by $10.00 per share (as adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction). Unless Invetech has elected to exercise these conversion rights, we, subject to specified exceptions, may prepay the note in whole or in part, in cash, at any time without penalty or premium.

Troubled Debt Restructuring with Saint-Gobain. As of September 30, 2017, we had recorded accrued expenses of $4.8 million payable to Saint-Gobain. On November 22, 2017, we entered into the Saint-Gobain Satisfaction and Release Agreement. Under the Saint Gobain Satisfaction and Release Agreement, we agreed to make, issue and deliver to Saint-Gobain (i) a cash payment of $0.5 million, (ii) 34,499 shares of common stock, (iii) an unsecured convertible promissory note in the original principal amount of $2.4 million, and (iv) certain specified equipment originally provided to us by Saint-Gobain under the Saint-Gobain Development Agreement, on account of and in full satisfaction and release of all of our payment obligations to Saint-Gobain arising under the Saint-Gobain Development Agreement, prior to the date of the Saint-Gobain Satisfaction and Release Agreement, including the development fees and charges. As a result, we recognized a gain on the early extinguishment of debt of $0.6 million during the year ended December 31, 2017.

The maturity date for the payment of principal and interest under the note is September 30, 2020. The note bears interest at a rate of 6.0% per annum, which interest will compound quarterly. For the quarterly periods ended December 31, 2017, March 31, 2018, June 30, 2018 and September 30, 2018, we paid Saint-Gobain $270,000, $270,000, $185,000 and $185,000, respectively, in cash under the note. For the fiscal quarters ending December 31, 2018 and March 31, 2019, we are required to make quarterly installment payments under the note, each in an aggregate amount of up to $220,000, consisting of (i) cash in the amount of $100,000 and (ii) if certain specified conditions are met as of the corresponding payment date, up to $120,000 of shares of our common stock. For the fiscal quarters ending December 31, 2017, March 31, 2018, June 30, 2018, September 30, 2018, December 31, 2018 and March 31, 2019, if the conditions required for the issuance of common stock are not met solely because the price of the common stock at the time is less than $4.058 per share (as adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction), then we are required to pay in each such quarter cash equal to 50% of the value of the common stock that would otherwise have been issued. For the fiscal quarters ending June 30, 2019 through June 30, 2020, we are required to make quarterly installment payments under the note, each in an amount of $100,000, payable in cash.

Upon maturity of the note or at any time during the 75-day period prior to the maturity date of the note, Saint-Gobain may, at its option, elect to convert any amount of the outstanding principal and accrued interest into shares of our common stock. Upon a change of control pursuant to which Saint-Gobain has a redemption right, Saint-Gobain may, at its option, elect to convert any amount of the outstanding principal and accrued interest, less any remaining installment payments required to be made in cash, into shares of our common stock. We will be required to pay any amount not so converted in cash. Upon the occurrence of certain events of default, Saint-Gobain may, at its option, elect to convert any amount of the outstanding principal and accrued interest into shares of our common stock. We will be required to pay any amount not so converted in cash. In each case, the number of shares of common stock issuable upon such complete or partial conversion of the note is determined by dividing the portion of the principal and accrued or unpaid interest to be converted by $10.00 per share (as adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction). Unless Saint-Gobain has elected to exercise these conversion rights, we, subject to specified exceptions, may prepay the note in whole or in part, in cash, at any time without penalty or premium.

Venture Loan and Security Agreement. In September 2014, we entered into the Loan Agreement with the Lenders, under which we borrowed $25.0 million in two tranches of $12.5 million each. The per annum interest rate for each tranche was a floating rate equal to 9.25% plus the amount by which the one-month LIBOR exceeds 0.50% (effectively a floating rate equal to 8.75% plus the one-month LIBOR Rate). The total per annum interest rate could not exceed 10.75%.

On March 3, 2017, we entered into a payoff letter with the Lenders, pursuant to which we paid, on March 6, 2017, a total of $23.1 million to the Lenders, representing the principal balance and accrued interest outstanding under the Loan Agreement in repayment of our outstanding obligations under the Loan Agreement. In addition, we issued to the Lenders five year warrants to purchase an aggregate of 5,000 shares of common stock at an exercise price of $26.00 per share in consideration of the Lenders acceptance of $23.1 million as payment in full. Upon the payment of the $23.1 million and the issuance of the warrants pursuant to the payoff letter, all of our outstanding indebtedness and obligations to the Lenders under the Loan Agreement were deemed paid in full, and the Loan Agreement and the notes thereunder were terminated.

At-the-market Offering. On May 8, 2015, we filed a shelf registration statement on Form S-3, or the 2015 Shelf, with the SEC, which covers the offering, issuance and sale of up to $125.0 million of our common stock, preferred stock, debt securities, depositary shares, purchase contracts, purchase units and warrants. We simultaneously entered into a sales agreement, or the Original Sales Agreement, with Cowen and Company LLC, or Cowen, to provide for the offering, issuance and sale of up to $30.0 million of our common stock from time to time in "at-the-market" offerings under the 2015 Shelf. The 2015 Shelf was declared effective by the SEC on May 14, 2015.

On January 9, 2017, we filed a shelf registration statement on Form S-3, or the 2017 Shelf, with the SEC, which covers the offering, issuance and sale of up to $200.0 million of our common stock, preferred stock, debt securities, depositary shares, purchase contracts, purchase units and warrants and which became effective on January 24, 2017. On February 2, 2018, we amended and restated the Original Sales Agreement with Cowen, or the Amended and Restated Sales Agreement, in order to increase the maximum aggregate offering price of our shares of common stock that may be offered from time to time in "at-the-market offerings" by $15.0 million from $30.0 million to $45.0 million. On February 2, 2018, we filed a prospectus supplement with the SEC in connection with the issuance and sale of the additional shares available under the 2017 Shelf. We refer to the Original Sales Agreement and the Amended and Restated Sales Agreement collectively as the Sales Agreement.

Under the Sales Agreement, we paid Cowen a commission of up to 3% of the gross proceeds. From December 31, 2017 through April 25, 2018, the Company sold 4,135,993 shares of common stock pursuant to the Sales Agreement, resulting in proceeds of $7.5 million, net of commissions and issuance costs. However, upon the delisting of our common stock from The Nasdaq Capital Market in April 2018, we ceased to sell any additional shares under the Sales Agreement.

Follow-On Public Offering. On August 2, 2016, we issued and sold 454,545 shares of common stock and warrants to purchase an aggregate of 340,909 shares of common stock, in an underwritten public offering at a price to the public of $110.00 per share and accompanying warrant. The shares of common stock and warrants were sold in combination, with one warrant to purchase up to 0.75 of a share of common stock accompanying each share of common stock sold. The warrants have an exercise price of $110.00 per share, became immediately exercisable upon issuance and will expire on August 2, 2021. The aggregate net proceeds to us of the offering were approximately $48.2 million after deducting underwriting discounts and commissions and offering expenses.

Convertible Note. On June 15, 2017, we entered into a convertible note purchase agreement with Pharmstandard, pursuant to which we agreed to issue and sell to Pharmstandard a convertible secured promissory note in the original principal amount of $6.0 million in a private placement. We issued the note to Pharmstandard on June 21, 2017, the closing date of the financing. Under the note, the maturity date for the payment of principal and interest is the fifth anniversary of the issue date. The note bears interest at a rate of 9.5% per annum, which interest compounds annually. The note is secured by a lien on and security interest in all of our intellectual property. We may prepay the note in whole or in part at any time without penalty or premium. Upon the occurrence of certain events of default, Pharmstandard will have the option to require us to repay the unpaid principal amount of the note and any unpaid accrued interest.

In addition, at Pharmstandard's election, Pharmstandard may convert the entire principal and interest of the note into shares of our common stock at a price per share equal to $10.00. However, Pharmstandard will not be permitted to convert the entire note if such conversion would result in Pharmstandard and its affiliates holding shares that exceed 39.9% of the total number of outstanding shares of our common stock or 39.9% of the combined voting power of all of our outstanding securities. To the extent that conversion of the entire note would cause Pharmstandard and its affiliates to exceed these thresholds, Pharmstandard may convert a portion of the note to the extent these thresholds are not exceeded by such partial conversion.

Pharmstandard is our largest stockholder, and beneficially owned, in the aggregate, shares representing approximately 14.7% of our outstanding common stock as of November 17, 2018. In addition, two members of our board of directors are closely associated with Pharmstandard.

We paid $23,000 in legal expenses of Pharmstandard, including legal expenses incurred in connection with our resale registration obligations set forth in a registration rights agreement that we entered into with Pharmstandard. We have granted Pharmstandard, and Pharmstandard has granted us, indemnification rights with respect to each parties' respective representations, warranties, covenants and agreements under the note purchase agreement.

Cash Flows

The following table sets forth the major sources and uses of cash for the periods set forth below:

	Nine Months Ended September 30,	
	2017	2018
	(in thousands)	
Net cash (used in) provided by:		
Operating activities	$ (31,513)	$ (14,646)
Investing activities	(2,213)	630
Financing activities	(9,884)	6,771
Effect of exchange rate changes on cash	9	(3)
Net increase (decrease) in cash and cash equivalents	$ (43,601)	$ (7,248)

Operating Activities.

Net cash used in operating activities of $14.6 million during the nine months ended September 30, 2018 was primarily a result of our $13.6 million net loss and an increase in net operating assets of $5.1 million, partially offset by non-cash items of $4.1 million.

The increase in net operating assets reflects a decrease in deferred revenue of $6.0 million and a decrease in accounts payable of $0.6 million partially offset by a decrease in prepaid expenses and other receivables of $0.3 million and an increase in accrued expenses of $1.3 million.

The non-cash items primarily reflect compensation expense related to stock options of $2.0 million, depreciation and amortization expense of $1.7 million, interest accrued on long term debt of $0.5 million and issuance of common stock for a license option of $0.4 million, partially offset by a gain on the early extinguishment of debt of $0.3 million and a decrease in the fair value of the warrant liability of $0.2 million.

Net cash used in operating activities of $31.5 million during the nine months ended September 30, 2017 was primarily a result of our $38.7 million net loss and an increase in net operating assets of $5.9 million, partially offset by non-cash items of $12.9 million.

The increase in net operating assets reflects a decrease in accounts payable of $2.4 million, a decrease in accrued expenses of $2.8 million, an increase in prepaid expenses and other receivables of $0.4 million, a decrease in the manufacturing research and development obligation of $0.4 million and a decrease in deferred liabilities of $0.1 million, partially offset by an increase in the current portion of the restructuring obligation of $0.2 million.

The non-cash items primarily reflect an impairment loss on property and equipment of $27.2 million, compensation expense related to stock options of $7.0 million, depreciation and amortization expense of $0.7 million and interest accrued on long term debt of $0.5 million, partially offset by a decrease in the fair value of the warrant liability of $20.7 million and a gain on the early extinguishment of debt of $1.7 million.

Investing Activities.

Net cash provided by investing activities was $0.6 million during the nine months ended September 30, 2018, consisting of proceeds of $0.6 million from the sale of property and equipment.

Net cash used in investing activities was $2.2 million during the nine months ended September 30, 2017, consisting of $3.7 million of purchases of property and equipment, partially offset by proceeds of $1.5 million from the sale of property and equipment.

Financing Activities.

Net cash provided by financing activities was $6.8 million during the nine months ended September 30, 2018, consisting primarily of $7.5 million of proceeds from the issuance of common stock through our at-the-market offering and the sale of $0.4 million of common stock to Lummy HK, partially offset by $1.1 million of debt amortization payments.

Net cash used in financing activities was $9.9 million during the nine months ended September 30, 2017, consisting primarily of $23.6 million for repayment of the Loan Agreement, partially offset by $6.0 million of proceeds from the convertible note issued to Pharmstandard and $7.8 million of proceeds from the issuance of common stock through our at-the-market offering.

Funding Requirements

To date, we have not generated any product revenue from our development stage product candidates. We do not know when, or if, we will generate any product revenue. We do not expect to generate significant product revenue unless or until we obtain marketing approval of, and commercialize, a product candidate.

As of September 30, 2018, we had cash and cash equivalents of $7.9 million. We do not currently have sufficient cash resources to pay all of our accrued obligations in full or to continue our business operations beyond the end of 2018.

In light of the termination of the development of rocapuldencel-T, cessation of our research and development activities and our cash resources, and based on a review of the status of our internal programs, resources and capabilities, we are pursuing a strategic alternative that may involve an asset sale, dissolution, liquidation, wind-down or protection under the bankruptcy laws. There can be no assurance that we will be able to enter into a strategic transaction on a timely basis, on terms that are favorable to us, or at all. If we decide to seek protection under the bankruptcy laws, and if we decide to wind down the company under the bankruptcy laws or otherwise, it is unclear to what extent we will be able to pay our obligations to creditors, and, whether and to what extent any resources will be available for distributions to our stockholders. However, based on our current resources, we believe that it is unlikely that any resources will be available for distributions to our stockholders and that a likely outcome of our wind-down and potential bankruptcy proceeding will be the cancellation or extinguishment of all outstanding shares in the company without any payment or other distribution on account of those shares.

On April 23, 2018, we received a notification from The Nasdaq Stock Market LLC indicating that, because we had indicated that we would be unable to meet the stockholders' equity requirement for continued listing as of the April 24, 2018 deadline that had been set by the Nasdaq Hearing Panel, the Nasdaq Hearing Panel had determined to delist our common stock from The Nasdaq Capital Market and to suspend trading in our common stock effective at the open of business on April 25, 2018. Following such delisting, we transferred our common stock to the OTCQB® Venture Market. Because our common stock is not listed for trading on a national securities exchange, our ability to raise capital to continue to fund our operations by selling shares and our ability to acquire other companies or technologies by using our shares as consideration has been impaired.

We have based our estimates on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with the development and commercialization of product candidates, we are unable to estimate the amounts of increased capital outlays and operating expenditures necessary to complete the development of product candidates.

Critical Accounting Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which we have prepared in accordance with U.S. GAAP. The preparation of these consolidated 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. We evaluate these estimates and judgments on an ongoing basis. 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. Our actual results may differ from these estimates under different assumptions or conditions.

Our significant accounting policies are described in Note 1 of the notes to our financial statements in our Annual Report on Form 10-K for the year ended December 31, 2017. Other than as described below, there have been no significant changes to our critical accounting policies since December 31, 2017.

Revenue Recognition. An important part of our business strategy has been to enter into arrangements with third parties both to assist in the development and commercialization of our product candidates, particularly in international markets, and to in-license product candidates in order to expand our pipeline. The terms of the agreements typically include non-refundable license fees, funding of research and development, payments based upon achievement of clinical development and regulatory objectives, and royalties on product sales. We have adopted the provisions of the Financial Accounting Standards Board, or FASB, Codification Topic 606, Revenue from Contracts with Customers, or Topic 606, effective January 1, 2018. This guidance supersedes the provisions of FASB Codification Topic 605, Revenue Recognition.

License Fees and Multiple Element Arrangements. If a license to our intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, we recognize revenues from non-refundable, up-front fees allocated to the license at such time as the license is transferred to the licensee and the licensee is able to use, and benefit from, the license. For licenses that are bundled with other promises, we utilize judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. We evaluate the measure of progress in each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

If we are involved in a steering committee as part of a multiple element arrangement, we assess whether our involvement constitutes a performance obligation or a right to participate. Steering committee services that are determined to be performance obligations are combined with other research services or performance obligations required under an arrangement, if any, in determining the level of effort required in an arrangement and the period over which we expect to complete our aggregate performance obligations.

If we cannot reasonably measure its progress toward complete satisfaction of a performance obligation because it lacks reliable information that would be required to apply an appropriate method of measuring progress, but we can reasonably estimate when the performance obligation ceases or the remaining obligations become inconsequential and perfunctory, then revenue is not recognized until we can reasonably estimate when the performance obligation ceases or becomes inconsequential. Revenue is then recognized over the remaining estimated period of performance.

Significant management judgment is required in determining the level of effort required under an arrangement and the period over which we are expected to complete our performance obligations under an arrangement.

Development Milestone Payments. At the inception of each arrangement that includes development milestone payments, we evaluate whether the milestones are considered probable of being achieved and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control or the control of the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. We evaluate factors such as the scientific, clinical, regulatory, commercial, and other risks that must be overcome to achieve the particular milestone in making this assessment. There is considerable judgment involved in determining whether it is probable that a significant revenue reversal would not occur. At the end of each subsequent reporting period, we reevaluate the probability of achievement of all milestones subject to constraint and, if necessary, adjusts our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

Reimbursement of Costs. Reimbursement of research and development costs by third party collaborators is recognized as revenue over time provided we have determined that it transfers control (for example, performs the services) of a service over time and, therefore, satisfies a performance obligation according to the provisions outlined in the FASB Codification Topic 606-10-25-27, Revenue Recognition.

Royalty Revenue. For arrangements that include sales-based royalties, including milestone payments based on a level of sales, which are the result of a customer-vendor relationship and for which the license is deemed to be the predominant item to which the royalties relate, we recognize revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied or partially satisfied. To date, we have not recognized any royalty revenue resulting from any of its collaboration agreements.

Deferred Revenue. Amounts received prior to satisfying the above revenue recognition criteria are recorded as deferred revenue in the accompanying condensed consolidated balance sheets. Short-term deferred revenue would consist of amounts that are expected to be recognized as revenue within the next fiscal year. Amounts that the we expect will not be recognized in the next fiscal year would be classified as long-term deferred revenue.

With respect to each of the foregoing areas of revenue recognition, we exercise significant judgment in determining whether an arrangement contains multiple elements, and, if so, how much revenue is allocable to each element. In addition, we exercise our judgment in determining when its significant obligations have been met under such agreements and the specific time periods over which we recognized revenue, such as non-refundable, up-front license fees. To the extent that actual facts and circumstances differ from our initial judgments, revenue recognition with respect to such transactions would change accordingly and any such change could affect our reported financial results.

Contractual Obligations

During the nine months ended September 30, 2018, there were no material changes outside the ordinary course of our business to our contractual obligations as disclosed in our Annual Report on Form 10-K for the year ended December 31, 2017.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Our primary exposure to market risk is limited to our cash and cash equivalents, all of which have maturities of three months or less. The related interest income sensitivity is affected by changes in the general level of short-term U.S. interest rates. We primarily invest in high quality, short-term marketable debt securities issued by high quality financial and industrial companies.

Due to the short-term duration and low risk profile of our cash, cash equivalents and short-term investments, an immediate 10.0% change in interest rates would not have a material effect on the fair value of our portfolio. Accordingly, we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on our cash, cash equivalents and short-term investments.

We do not believe that our cash and cash equivalents have significant risk of default or illiquidity. While we believe our cash and cash equivalents do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in fair value. In addition, we maintain significant amounts of cash and cash equivalents at one or more financial institutions that are in excess of federally insured limits.

All of our other debt instruments and liabilities that incur interest charges do so at fixed rates. We incur interest expense at fixed rates under the promissory note payable to Medinet (3% per annum), the convertible note payable to Pharmstandard (9.5% per annum), the convertible note payable to Invetech (6% per annum) and the convertible note payable to Saint-Gobain (6% per annum).

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Under the supervision of and with the participation of our management, including our chief executive officer, who is our principal executive officer, and our chief financial officer, who is our principal financial officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures as of September 30, 2018. The term "disclosure controls and procedures," as set forth in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the rules and forms promulgated by the Securities and Exchange Commission. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of September 30, 2018, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting that occurred during the period covered by this Quarterly Report on Form 10-Q that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We are not a party to any legal proceedings and are not aware of any claims or actions pending or threatened against us. In the future, we might from time to time become involved in litigation relating to claims arising from our ordinary course of business.

Item 1A. Risk Factors

Investing in our securities involves a high degree of risk. In addition to the information contained elsewhere in this report and under this Item 1A, you should carefully consider the factors discussed in "Part I, Item 1A. Risk Factors" in our Annual Report filed on Form 10-K for the year ended December 31, 2017, and any updates thereto contained in the Quarterly Report on form 10-Q for the period ending March 31, 2018, which could materially affect our business, financial condition or future results.

If we decide to seek protection under the bankruptcy laws, and if we decide to wind down the company under the bankruptcy laws or otherwise, risks and uncertainties associated with a potential bankruptcy proceeding and a wind-down may lead to adverse effects on recoveries for our stakeholders.

Due to the risks and uncertainties associated with a potential bankruptcy proceeding and a wind-down of our company, we cannot assure our creditors or stockholders of any recovery, or any specific level of recovery, on their claims and interests if we determine to seek protection under the bankruptcy laws or wind down the company. Our wind-down and potential bankruptcy proceeding, and any distributions made in connection with our wind-down and bankruptcy proceeding, will be affected by a number of factors, including:

- the timing, duration, and cost of the wind-down and potential bankruptcy process;
- our ability to effectuate transactions, if any, in the course of our wind-down and potential bankruptcy proceeding, and the value to be realized in any such transactions;
- our ability to obtain bankruptcy court approval with respect to motions we file in the potential bankruptcy proceeding and the impact of bankruptcy court rulings on the case in general;
- motions and other papers filed by third parties in the bankruptcy proceeding, and the bankruptcy court's reaction to the same; and
- our ability to conclude the bankruptcy proceeding through a plan of liquidation or other means.

Notwithstanding these and other variables, based on our current resources, we believe that it is unlikely that any resources will be available for distributions to our stockholders and that a likely outcome of our wind-down and potential bankruptcy proceeding will be the cancellation or extinguishment of all outstanding shares in the company without any payment or other distribution on account of those shares.

Item 6. Exhibits

Exhibit Number	Description of Exhibit
10.1*	Retention Agreement, dated July 20, 2018, by and between the Registrant and Jeffrey D. Abbey
10.2*	Retention Agreement, dated July 20, 2018, by and between the Registrant and Richard Katz
10.3*	Retention Agreement, dated July 20, 2018, by and between the Registrant and Charles Nicolette
10.4*	Release of Claims Agreement, dated July 20, 2018, by and between the Registrant and Jeffrey D. Abbey
10.5*	Release of Claims Agreement, dated July 20, 2018, by and between the Registrant and Richard Katz
10.6*	Release of Claims Agreement, dated July 20, 2018, by and between the Registrant and Charles Nicolette
10.7*	Consulting Agreement, dated August 29, 2018, by and between the Registrant and Jeffrey D. Abbey
10.8*	Consulting Agreement, dated August 29, 2018, by and between the Registrant and Richard Katz
10.9*	Consulting Agreement, dated August 29, 2018, by and between the Registrant and Charles Nicolette
31.1*	Certification of principal executive officer pursuant to Rules 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of principal financial officer pursuant to Rules 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1#	Certifications pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of The Sarbanes-Oxley Act of 2002, by the Registrant's principal executive officer and principal financial officer
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

\# This certification will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent specifically incorporated by reference into such filing.

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.

ARGOS THERAPEUTICS, INC.

By: /s/ Jeffrey D. Abbey
Name: Jeffrey D. Abbey
Title: President and Chief Executive Officer

Date: November 19, 2018

Exhibit 10.1

RETENTION AGREEMENT

This Retention Agreement (the "Agreement") is entered into as of July 20, 2018, by and between Argos Therapeutics, Inc. (the "Company") and Jeffrey D. Abbey ("Executive").

WHEREAS, Executive and the Company entered into that certain offer letter dated December 9, 2013 (the "Offer Letter"); and

WHEREAS, the Offer Letter provides for the payment of certain amounts of salary and severance upon certain conditions; and

WHEREAS, the Company is in the process of pursuing various strategic alternatives, including without limitation a merger of the Company or the winding down of the Company (the "Transition"); and

WHEREAS, in the Executive's position as President and Chief Executive Officer, Executive has obtained considerable knowledge and expertise about the Company and its business operations; and

WHEREAS, in order to complete any strategic alternatives as part of the Transition, the Company desires to continue to retain the services of Executive and the benefits of Executive's experience and knowledge; and

WHEREAS, the Company recognizes the effort and commitment required of Executive to complete any transactions as part of the Transition and wants to create an incentive for Executive to continue to be employed by the Company during the Transition; and

WHEREAS, the Executive desires to continue to perform services for the Company in accordance with the terms set forth below.

NOW, THEREFORE, in consideration of the premises (which are incorporated herein by reference) and the consideration set forth below, the sufficiency of which is hereby acknowledged and agreed, the parties hereby agree as follows:

1. Initial Retention Payment. The Company will pay Executive an initial retention payment (the "Initial Retention Payment") of $ 97,200 upon the date hereof (the "First Payment Date"), subject to the following terms and conditions: (a) the Executive must execute and deliver to the Company a Release of Claims Agreement as set forth in Exhibit A, attached hereto, on or before the date hereof; and (b) the payment of the Initial Retention Payment will be subject to applicable taxes and withholdings.

2. Second Retention Payment. The Company will pay Executive a second retention payment (the "Second Retention Payment") of $ 223,915 on August 15, 2018 (the "Second Payment Date"), subject to the following terms and conditions: (a) the Executive must have satisfied the conditions for the payment of the Initial Retention Payment; (b) the Executive must be employed by the Company on the Second Payment Date or the Executive's employment must have been terminated by the Company without Cause or by the Executive with Good Reason before the Second Payment Date; (c) Executive must execute the Reaffirmation of Release of Claims Agreement attached hereto as Exhibit B on or before August 15, 2018; (d) the payment of the Second Retention Payment will be subject to applicable taxes and withholdings; and (e) the Executive must execute and deliver the Consulting Agreement attached hereto as Exhibit C on or before August 15, 2018. If Executive fails to execute the Reaffirmation of Release of Claims Agreement or the Consulting Agreement on or before August 15, 2018, the Company shall provide the Executive with written notification of such deficiency. Executive shall then have ten (10) business days to correct any deficiency without any penalty.

3. Amendment of Salary. The Company and Executive agree that, for the period from July 16 to August 15, 2018 only, the Executive's base salary shall be increased such that the amount paid during each semi-monthly pay period during such period will equal $30,000 (the "Salary Adjustment"). The Salary Adjustment, less applicable taxes and deductions, shall be paid in the Company's normal payroll periods. After August 15, 2018, the Executive's salary shall return to its amount in effect immediately prior to the signing of this Retention Agreement.

4. Amendment of Offer Letter. In consideration of the Salary Adjustment and the payment of the Retention Payments, upon payment of the First Retention Payment, Executive hereby waives his right to receive severance and any other post-employment benefits upon the termination of employment without Cause or for Good Reason, including termination of employment without Cause or for Good Reason following a Change of Control, each as defined and set forth in the Offer Letter (the "Severance Waiver"). All of the other terms and conditions of the Offer Letter will remain in full force and effect. Notwithstanding the foregoing, if for any reason either the First or Second Retention Payment or the Salary Adjustment is required to be repaid by Executive or is otherwise voided or recovered or the Company fails to pay the Second Retention Payment when due, then the Executive's Severance Waiver shall immediately and without further notice be revoked and Executive shall retain all rights to severance and any other post-employment benefits set forth in the Offer Letter.

5. Effect of Breach of Consulting Agreement. If Executive materially breaches the Consulting Agreement during the first 60 days that it is in effect, Executive shall repay 25% of the Initial Retention Payment and the Second Retention Payment.

6. Termination Prior to Second Retention Payment. If the Executive's employment is terminated by the Company or if the Executive resigns for Good Reason prior to the payment of the Second Retention Payment, the Company shall pay the Executive the Second Retention Payment and any unpaid Salary Adjustment amount upon such termination or resignation.

7. Section 409A. The terms of this Agreement are intended to comply or be exempt from the provisions of Section 409A (as defined in the Offer Letter) and will be construed in accordance therewith. The Company makes no representations or warranties to the Executive and has no liability to Executive if any of the provisions or payments under this Agreement are determined to constitute deferred compensation subject to the terms of 409A but not to satisfy the conditions of that Section.

8. Governing Law and Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of North Carolina (without reference to the conflicts of law provisions thereof.) Any action, suit or other legal proceeding which is commenced to resolve any matter arising under or relating to any provision of this Agreement shall be commenced only in a court in Durham County, North Carolina.

9. Counterparts. This Agreement may be executed in two or more counterparts, each of which will deemed an original and all of which taken together shall constitute one and the same instrument.

10. Successors and Assigns. This Agreement, together with the Exhibits attached hereto, and the Offer Letter sets forth the entire agreement between the Company and the Executive and replaces all prior communications, agreements and understandings, whether oral or written, with respect to the subject matter hereof. This Agreement may only be modified or amended by written agreement executed by the Company and Executive.

IN WITNESS WHEREOF, the Company and Executive have executed this Agreement as of the date set forth above.

ARGOS THERAPEUTICS, INC.

/s/ Hubert Birner
By: Hubert Birner
Its: Chairman of the Board

JEFFREY ABBEY

/s/ Jeffrey Abbey

Exhibit 10.2

RETENTION AGREEMENT

This Retention Agreement (the "Agreement") is entered into as of July 20, 2018, by and between Argos Therapeutics, Inc. (the "Company") and Richard D. Katz ("Executive").

WHEREAS, Executive and the Company entered into that certain offer letter dated July 1, 2016 (the "Offer Letter"); and

WHEREAS, the Offer Letter provides for the payment of certain amounts of salary and severance upon certain conditions; and

WHEREAS, the Company is in the process of pursuing various strategic alternatives, including without limitation a merger of the Company or the winding down of the Company (the "Transition"); and

WHEREAS, in the Executive's position as Vice President and Chief Financial Officer, Executive has obtained considerable knowledge and expertise about the Company and its business operations; and

WHEREAS, in order to complete any strategic alternatives as part of the Transition, the Company desires to continue to retain the services of Executive and the benefits of Executive's experience and knowledge; and

WHEREAS, the Company recognizes the effort and commitment required of Executive to complete any transactions as part of the Transition and wants to create an incentive for Executive to continue to be employed by the Company during the Transition; and

WHEREAS, the Executive desires to continue to perform services for the Company in accordance with the terms set forth below.

NOW, THEREFORE, in consideration of the premises (which are incorporated herein by reference) and the consideration set forth below, the sufficiency of which is hereby acknowledged and agreed, the parties hereby agree as follows:

1. Initial Retention Payment. The Company will pay Executive an initial retention payment (the "Initial Retention Payment") of $ 61,762 upon the date hereof (the "First Payment Date"), subject to the following terms and conditions: (a) the Executive must execute and deliver to the Company a Release of Claims Agreement as set forth in Exhibit A, attached hereto, on or before the date hereof; and (b) the payment of the Initial Retention Payment will be subject to applicable taxes and withholdings.

2. Second Retention Payment. The Company will pay Executive a second retention payment (the "Second Retention Payment") of $ 148,519 on August 15, 2018 (the "Second Payment Date"), subject to the following terms and conditions: (a) the Executive must have satisfied the conditions for the payment of the Initial Retention Payment; (b) the Executive must be employed by the Company on the Second Payment Date or the Executive's employment must have been terminated by the Company without Cause or by the Executive with Good Reason before the Second Payment Date; (c) Executive must execute the Reaffirmation of Release of Claims Agreement attached hereto as Exhibit B on or before August 15, 2018; (d) the payment of the Second Retention Payment will be subject to applicable taxes and withholdings; and (e) the Executive must execute and deliver the Consulting Agreement attached hereto as Exhibit C on or before August 15, 2018. If Executive fails to execute the Reaffirmation of Release of Claims Agreement or the Consulting Agreement on or before August 15, 2018, the Company shall provide the Executive with written notification of such deficiency. Executive shall then have ten (10) business days to correct any deficiency without any penalty.

3. Amendment of Salary. The Company and Executive agree that, for the period from July 16 to August 15, 2018 only, the Executive's base salary shall be increased such that the amount paid during each semi-monthly pay period during such period will equal $19,062 (the "Salary Adjustment"). The Salary Adjustment, less applicable taxes and deductions, shall be paid in the Company's normal payroll periods. After August 15, 2018, the Executive's salary shall return to its amount in effect immediately prior to the signing of this Retention Agreement.

4. Amendment of Offer Letter. In consideration of the Salary Adjustment and the payment of the Retention Payments, upon payment of the First Retention Payment, Executive hereby waives his right to receive severance and any other post-employment benefits upon the termination of employment without Cause or for Good Reason, including termination of employment without Cause or for Good Reason following a Change of Control, each as defined and set forth in the Offer Letter (the "Severance Waiver"). All of the other terms and conditions of the Offer Letter will remain in full force and effect. Notwithstanding the foregoing, if for any reason either the First or Second Retention Payment or the Salary Adjustment is required to be repaid by Executive or is otherwise voided or recovered or the Company fails to pay the Second Retention Payment when due, then the Executive's Severance Waiver shall immediately and without further notice be revoked and Executive shall retain all rights to severance and any other post-employment benefits set forth in the Offer Letter.

5. Effect of Breach of Consulting Agreement. If Executive materially breaches the Consulting Agreement during the first 60 days that it is in effect, Executive shall repay 25% of the Initial Retention Payment and the Second Retention Payment.

6. Termination Prior to Second Retention Payment. If the Executive's employment is terminated by the Company or if the Executive resigns for Good Reason prior to the payment of the Second Retention Payment, the Company shall pay the Executive the Second Retention Payment and any unpaid Salary Adjustment amount upon such termination or resignation.

7. Section 409A. The terms of this Agreement are intended to comply or be exempt from the provisions of Section 409A (as defined in the Offer Letter) and will be construed in accordance therewith. The Company makes no representations or warranties to the Executive and has no liability to Executive if any of the provisions or payments under this Agreement are determined to constitute deferred compensation subject to the terms of 409A but not to satisfy the conditions of that Section.

8. Governing Law and Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of North Carolina (without reference to the conflicts of law provisions thereof.) Any action, suit or other legal proceeding which is commenced to resolve any matter arising under or relating to any provision of this Agreement shall be commenced only in a court in Durham County, North Carolina.

9. Counterparts. This Agreement may be executed in two or more counterparts, each of which will deemed an original and all of which taken together shall constitute one and the same instrument.

10. Successors and Assigns. This Agreement, together with the Exhibits attached hereto, and the Offer Letter sets forth the entire agreement between the Company and the Executive and replaces all prior communications, agreements and understandings, whether oral or written, with respect to the subject matter hereof. This Agreement may only be modified or amended by written agreement executed by the Company and Executive.

IN WITNESS WHEREOF, the Company and Executive have executed this Agreement as of the date set forth above.

ARGOS THERAPEUTICS, INC.

/s/ Jeffrey Abbey
By: Jeffrey Abbey
Its: President and Chief Executive Officer

RICHARD KATZ

/s/ Richard Katz

Exhibit 10.3

RETENTION AGREEMENT

This Retention Agreement (the "Agreement") is entered into as of July 20, 2018, by and between Argos Therapeutics, Inc. (the "Company") and Charles Nicolette ("Executive").

WHEREAS, Executive and the Company entered into that certain offer letter dated December 9, 2013 (the "Offer Letter"); and

WHEREAS, the Offer Letter provides for the payment of certain amounts of salary and severance upon certain conditions; and

WHEREAS, the Company is in the process of pursuing various strategic alternatives, including without limitation a merger of the Company or the winding down of the Company (the "Transition"); and

WHEREAS, in the Executive's position as Vice President of Research and Development and Chief Scientific Officer, Executive has obtained considerable knowledge and expertise about the Company and its business operations; and

WHEREAS, in order to complete any strategic alternatives as part of the Transition, the Company desires to continue to retain the services of Executive and the benefits of Executive's experience and knowledge; and

WHEREAS, the Company recognizes the effort and commitment required of Executive to complete any transactions as part of the Transition and wants to create an incentive for Executive to continue to be employed by the Company during the Transition; and

WHEREAS, the Executive desires to continue to perform services for the Company in accordance with the terms set forth below.

NOW, THEREFORE, in consideration of the premises (which are incorporated herein by reference) and the consideration set forth below, the sufficiency of which is hereby acknowledged and agreed, the parties hereby agree as follows:

1. Initial Retention Payment. The Company will pay Executive an initial retention payment (the "Initial Retention Payment") of $ 77,963 upon the date hereof (the "First Payment Date"), subject to the following terms and conditions: (a) the Executive must execute and deliver to the Company a Release of Claims Agreement as set forth in Exhibit A, attached hereto, on or before the date hereof; and (b) the payment of the Initial Retention Payment will be subject to applicable taxes and withholdings.

2. Second Retention Payment. The Company will pay Executive a second retention payment (the "Second Retention Payment") of $ 178,276 on August 15, 2018 (the "Second Payment Date"), subject to the following terms and conditions: (a) the Executive must have satisfied the conditions for the payment of the Initial Retention Payment; (b) the Executive must be employed by the Company on the Second Payment Date or the Executive's employment must have been terminated by the Company without Cause or by the Executive with Good Reason before the Second Payment Date; (c) Executive must execute the Reaffirmation of Release of Claims Agreement attached hereto as Exhibit B on or before August 15, 2018; (d) the payment of the Second Retention Payment will be subject to applicable taxes and withholdings; and (e) the Executive must execute and deliver the Consulting Agreement attached hereto as Exhibit C on or before August 15, 2018. If Executive fails to execute the Reaffirmation of Release of Claims Agreement or the Consulting Agreement on or before August 15, 2018, the Company shall provide the Executive with written notification of such deficiency. Executive shall then have ten (10) business days to correct any deficiency without any penalty.

3. Amendment of Salary. The Company and Executive agree that, for the period from July 16 to August 15, 2018 only, the Executive's base salary shall be increased such that the amount paid during each semi-monthly pay period during such period will equal $24,063 (the "Salary Adjustment"). The Salary Adjustment, less applicable taxes and deductions, shall be paid in the Company's normal payroll periods. After August 15, 2018, the Executive's salary shall return to its amount in effect immediately prior to the signing of this Retention Agreement.

4. Amendment of Offer Letter. In consideration of the Salary Adjustment and the payment of the Retention Payments, upon payment of the First Retention Payment, Executive hereby waives his right to receive severance and any other post-employment benefits upon the termination of employment without Cause or for Good Reason, including termination of employment without Cause or for Good Reason following a Change of Control, each as defined and set forth in the Offer Letter (the "Severance Waiver"). All of the other terms and conditions of the Offer Letter will remain in full force and effect. Notwithstanding the foregoing, if for any reason either the First or Second Retention Payment or the Salary Adjustment is required to be repaid by Executive or is otherwise voided or recovered or the Company fails to pay the Second Retention Payment when due, then the Executive's Severance Waiver shall immediately and without further notice be revoked and Executive shall retain all rights to severance and any other post-employment benefits set forth in the Offer Letter.

5. Effect of Breach of Consulting Agreement. If Executive materially breaches the Consulting Agreement during the first 60 days that it is in effect, Executive shall repay 25% of the Initial Retention Payment and the Second Retention Payment.

6. Termination Prior to Second Retention Payment. If the Executive's employment is terminated by the Company or if the Executive resigns for Good Reason prior to the payment of the Second Retention Payment, the Company shall pay the Executive the Second Retention Payment and any unpaid Salary Adjustment amount upon such termination or resignation.

7. Section 409A. The terms of this Agreement are intended to comply or be exempt from the provisions of Section 409A (as defined in the Offer Letter) and will be construed in accordance therewith. The Company makes no representations or warranties to the Executive and has no liability to Executive if any of the provisions or payments under this Agreement are determined to constitute deferred compensation subject to the terms of 409A but not to satisfy the conditions of that Section.

8. Governing Law and Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of North Carolina (without reference to the conflicts of law provisions thereof.) Any action, suit or other legal proceeding which is commenced to resolve any matter arising under or relating to any provision of this Agreement shall be commenced only in a court in Durham County, North Carolina.

9. Counterparts. This Agreement may be executed in two or more counterparts, each of which will deemed an original and all of which taken together shall constitute one and the same instrument.

10. Successors and Assigns. This Agreement, together with the Exhibits attached hereto, and the Offer Letter sets forth the entire agreement between the Company and the Executive and replaces all prior communications, agreements and understandings, whether oral or written, with respect to the subject matter hereof. This Agreement may only be modified or amended by written agreement executed by the Company and Executive.

IN WITNESS WHEREOF, the Company and Executive have executed this Agreement as of the date set forth above.

ARGOS THERAPEUTICS, INC.

/s/ Jeffrey Abbey
By: Jeffrey Abbey
Its: President and Chief Executive Officer

CHARLES NICOLETTE

/s/ Charles Nicolette

Exhibit 10.4

RELEASE OF CLAIMS AGREEMENT

In exchange for the consideration set forth in the Retention Agreement dated July 20, 2018 (the "Retention Agreement") to which this Release of Claims Agreement (the "Release Agreement") is attached as Exhibit A, including receipt of the Initial Retention Amount (as defined therein) and eligibility to receive the Temporary Revised Salary Amount and Second Retention Amount (each as defined therein), all of which I acknowledge I would not otherwise be entitled to receive, I hereby agree as follows:

1. **Release** – I hereby fully, forever, irrevocably and unconditionally release, remise and discharge the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, managers, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that I ever had or now have against any or all of the Released Parties, including, but not limited to, any and all claims arising out of or relating to my employment with and/or separation from the Company, including, but not limited to, the following and any and all claims for or related to aiding or abetting the following, whether direct or derivative, and whether brought myself or by or through the Company or any trustee, assignee, agent, or other representative thereof: all claims under Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e et seq., the Americans With Disabilities Act of 1990, 42 U.S.C. § 12101 et seq., the Genetic Information Nondiscrimination Act of 2008, 42 U.S.C. § 2000ff et seq., the Family and Medical Leave Act, 29 U.S.C. § 2601 et seq., the Worker Adjustment and Retraining Notification Act ("WARN"), 29 U.S.C. § 2101 et seq., the Rehabilitation Act of 1973, 29 U.S.C. § 701 et seq., Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, 15 U.S.C. § 1681 et seq., and the Employee Retirement Income Security Act of 1974 ("ERISA"), 29 U.S.C. § 1001 et seq., all as amended; all claims arising out of the North Carolina Equal Employment Practices Act, N.C. Gen. Stat. § 143-422.1 et seq., the North Carolina Persons with Disabilities Protection Act, N.C. Gen. Stat. § 168A-1 et seq., North Carolina Retaliatory Employment Discrimination Act, N.C. Gen. Stat. § 95-240 et seq., N.C. Gen. Stat. § 50B-5.5 (North Carolina domestic violence and crime leave law), N.C. Gen. Stat. § 95-28.3 (North Carolina parental leave for involvement at schools law), N.C. Gen. Stat. § 95-28.1A (North Carolina genetic testing law), and N.C. Gen. Stat. § 95-28.1 (North Carolina sickle cell law), all as amended; all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, breach of duty, misrepresentation, fraud, fraudulent transfer, wrongful discharge, and breach of contract (including without limitation all claims arising out of or related to the Employment Agreement and/or any benefits to which I may otherwise have been entitled thereunder); all claims to any unvested ownership interest in the Company, contractual or otherwise; all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of my employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; provided, however, that nothing in this Release Agreement (a) prevents me from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that I acknowledge that I may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and I further waive any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding), or (b) releases claims to any payments to which I may be entitled under the Retention Agreement).

2. **Continuing Obligations** – I acknowledge and reaffirm my obligation to keep confidential and not to use or disclose any and all non-public information concerning the Company that I acquired during the course of my employment with the Company, including any non-public information concerning the Company's business affairs, business prospects, and financial condition, except as otherwise permitted by paragraph 7 below. Further, I acknowledge that I remain subject to any and all continuing confidentiality, non-competition and other obligations that I have pursuant to any previous agreement(s) with the Company ("Restrictive Covenant Obligations"), including, but not limited to, my obligations under Sections 5 and 6 of the Employment Agreement and any agreements referenced therein, which remain in full force and effect. For the avoidance of doubt, I further acknowledge that all of my Restrictive Covenant Obligations continue to apply during and after my engagement as a consultant to the Company pursuant to the Consulting Agreement attached as Exhibit C to the Retention Agreement.

3. **Non-Disparagement** – I understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 7 below, I will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition.

4. **Cooperation** – I agree that, to the extent permitted by law, I shall cooperate fully with the Company in the investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator. My full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with the Company's counsel, at reasonable times and locations designated by the Company, to investigate or prepare the Company's claims or defenses, to prepare for trial or discovery or an administrative hearing, mediation, arbitration or other proceeding and to act as a witness when requested by the Company. I further agree that, to the extent permitted by law, I will notify the Company promptly in the event that I am served with a subpoena (other than a subpoena issued by a government agency), or in the event that I am asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

5. **Return of Company Property and Information** – I agree that on the last day of my employment with the Company, or earlier upon request by the Company, I will return to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, flash drives and storage devices, wireless handheld devices, cellular phones, tablets, etc.), Company identification, and any other Company-owned property and information in my possession or control and that I will leave intact all electronic Company documents and information, including but not limited to those documents and that information that I developed or helped to develop during my employment, and I will not retain any copies. I further confirm that I will, on the last day of my employment with the Company, or earlier upon request by the Company, cancel all accounts for my benefit, if any, in the Company's name, including but not limited to, credit cards, telephone charge cards, cellular phone accounts, and computer accounts. Notwithstanding the foregoing, I understand that to the extent I am retained as a consultant to the Company after termination of my employment, and to the extent required in connection with the consulting services requested of me, I may retain property and information of the Company and accounts in the Company's name for the duration of the Consultation Period or until such earlier time as the Company may request, and return such property and information, and cancel such accounts, at the end of such period or upon such request, whichever is sooner.

6. **Confidentiality** – I understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 7 below, the terms and contents of this Release Agreement and the Retention Agreement, and the contents of the negotiations and discussions resulting in this Release Agreement and the Retention Agreement, shall be maintained as confidential by me and my agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company.

7. **Scope of Disclosure Restrictions** – I understand that nothing in this Release Agreement or elsewhere prohibits me from communicating with government agencies about possible violations of federal, state, or local laws or otherwise providing information to government agencies, filing a complaint with government agencies, or participating in government agency investigations or proceedings. I understand that I am not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information I obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding my confidentiality and nondisclosure obligations, I understand that I am hereby being advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

8. **Amendment and Waiver; Successors and Assigns** – This Release Agreement may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the Company. This Release Agreement is binding upon me and my agents, assigns, heirs, executors, successors and administrators, and any party acting on my behalf or by or through myself or my rights, and shall inure to the benefit of the Company's agents, assigns, successors and administrators. No delay or omission by the Company in exercising any right under this Release Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

9. **Validity** – Should any provision of this Release Agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this Release Agreement.

10. **Nature of Agreement –** I understand and agree that this Release Agreement does not constitute an admission of liability or wrongdoing on the part of the Company.

11. **Acknowledgments and Voluntary Assent –** I acknowledge that I have been given a reasonable amount of time to consider this Release Agreement. I affirm that no other promises or agreements of any kind have been made to or with me by any person or entity whatsoever to cause me to sign this Release Agreement, and that I fully understand the meaning and intent of this Release Agreement. I state and represent that I have had an opportunity to fully discuss and review the terms of this Release Agreement with an attorney. I further state and represent that I have carefully read this Release Agreement, understand the contents herein, freely and voluntarily assent to all of the terms and conditions hereof, and sign my name of my own free act.

12. **Applicable Law** – This Release Agreement shall be interpreted and construed by the laws of the State of North Carolina, without regard to conflict of laws provisions. I hereby irrevocably submit to and acknowledge and recognize the jurisdiction of the courts of the State of North Carolina, or if appropriate, a federal court located in the State of North Carolina (which courts, for purposes of this Release Agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this Release Agreement or the subject matter hereof.

13. **Entire Agreement** – This Release Agreement, together with the Retention Agreement and its other exhibits, contains and constitutes the entire understanding and agreement between the parties hereto with respect to the subject matter thereof and cancels any and all previous oral and written negotiations, agreements, and commitments in connection therewith.

14. **Tax Acknowledgement** – In connection with the Initial Retention Amount and Temporary Revised Salary Amount and any Second Retention Amount I may receive, each as described in the Retention Agreement, I understand that the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and that I shall be responsible for all applicable taxes with respect to such payments and benefits under applicable law. I further acknowledge that I am not relying upon the advice or representation of the Company with respect to the tax treatment of any payments or benefits described in the Retention Agreement.

I hereby agree to the terms and conditions set forth above.

/s/ Jeffrey Abbey	July 20, 2018
Jeffrey Abbey	Date

To be returned in a timely manner as set forth in the Retention Agreement.

Exhibit 10.5

RELEASE OF CLAIMS AGREEMENT

In exchange for the consideration set forth in the Retention Agreement dated July 20, 2018 (the "Retention Agreement") to which this Release of Claims Agreement (the "Release Agreement") is attached as Exhibit A, including receipt of the Initial Retention Amount (as defined therein) and eligibility to receive the Temporary Revised Salary Amount and Second Retention Amount (each as defined therein), all of which I acknowledge I would not otherwise be entitled to receive, I hereby agree as follows:

1. **Release** – I hereby fully, forever, irrevocably and unconditionally release, remise and discharge the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, managers, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that I ever had or now have against any or all of the Released Parties, including, but not limited to, any and all claims arising out of or relating to my employment with and/or separation from the Company, including, but not limited to, the following and any and all claims for or related to aiding or abetting the following, whether direct or derivative, and whether brought myself or by or through the Company or any trustee, assignee, agent, or other representative thereof: all claims under Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e et seq., the Americans With Disabilities Act of 1990, 42 U.S.C. § 12101 et seq., the Genetic Information Nondiscrimination Act of 2008, 42 U.S.C. § 2000ff et seq., the Family and Medical Leave Act, 29 U.S.C. § 2601 et seq., the Worker Adjustment and Retraining Notification Act ("WARN"), 29 U.S.C. § 2101 et seq., the Rehabilitation Act of 1973, 29 U.S.C. § 701 et seq., Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, 15 U.S.C. § 1681 et seq., and the Employee Retirement Income Security Act of 1974 ("ERISA"), 29 U.S.C. § 1001 et seq., all as amended; all claims arising out of the North Carolina Equal Employment Practices Act, N.C. Gen. Stat. § 143-422.1 et seq., the North Carolina Persons with Disabilities Protection Act, N.C. Gen. Stat. § 168A-1 et seq., North Carolina Retaliatory Employment Discrimination Act, N.C. Gen. Stat. § 95-240 et seq., N.C. Gen. Stat. § 50B-5.5 (North Carolina domestic violence and crime leave law), N.C. Gen. Stat. § 95-28.3 (North Carolina parental leave for involvement at schools law), N.C. Gen. Stat. § 95-28.1A (North Carolina genetic testing law), and N.C. Gen. Stat. § 95-28.1 (North Carolina sickle cell law), all as amended; all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, breach of duty, misrepresentation, fraud, fraudulent transfer, wrongful discharge, and breach of contract (including without limitation all claims arising out of or related to the Employment Agreement and/or any benefits to which I may otherwise have been entitled thereunder); all claims to any unvested ownership interest in the Company, contractual or otherwise; all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of my employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; provided, however, that nothing in this Release Agreement (a) prevents me from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that I acknowledge that I may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and I further waive any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding), or (b) releases claims to any payments to which I may be entitled under the Retention Agreement).

2. **Continuing Obligations** – I acknowledge and reaffirm my obligation to keep confidential and not to use or disclose any and all non-public information concerning the Company that I acquired during the course of my employment with the Company, including any non-public information concerning the Company's business affairs, business prospects, and financial condition, except as otherwise permitted by paragraph 7 below. Further, I acknowledge that I remain subject to any and all continuing confidentiality, non-competition and other obligations that I have pursuant to any previous agreement(s) with the Company ("Restrictive Covenant Obligations"), including, but not limited to, my obligations under Sections 5 and 6 of the Employment Agreement and any agreements referenced therein, which remain in full force and effect. For the avoidance of doubt, I further acknowledge that all of my Restrictive Covenant Obligations continue to apply during and after my engagement as a consultant to the Company pursuant to the Consulting Agreement attached as Exhibit C to the Retention Agreement.

3. **Non-Disparagement** – I understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 7 below, I will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition.

4. **Cooperation** – I agree that, to the extent permitted by law, I shall cooperate fully with the Company in the investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator. My full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with the Company's counsel, at reasonable times and locations designated by the Company, to investigate or prepare the Company's claims or defenses, to prepare for trial or discovery or an administrative hearing, mediation, arbitration or other proceeding and to act as a witness when requested by the Company. I further agree that, to the extent permitted by law, I will notify the Company promptly in the event that I am served with a subpoena (other than a subpoena issued by a government agency), or in the event that I am asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

5. **Return of Company Property and Information** – I agree that on the last day of my employment with the Company, or earlier upon request by the Company, I will return to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, flash drives and storage devices, wireless handheld devices, cellular phones, tablets, etc.), Company identification, and any other Company-owned property and information in my possession or control and that I will leave intact all electronic Company documents and information, including but not limited to those documents and that information that I developed or helped to develop during my employment, and I will not retain any copies. I further confirm that I will, on the last day of my employment with the Company, or earlier upon request by the Company, cancel all accounts for my benefit, if any, in the Company's name, including but not limited to, credit cards, telephone charge cards, cellular phone accounts, and computer accounts. Notwithstanding the foregoing, I understand that to the extent I am retained as a consultant to the Company after termination of my employment, and to the extent required in connection with the consulting services requested of me, I may retain property and information of the Company and accounts in the Company's name for the duration of the Consultation Period or until such earlier time as the Company may request, and return such property and information, and cancel such accounts, at the end of such period or upon such request, whichever is sooner.

6. **Confidentiality** – I understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 7 below, the terms and contents of this Release Agreement and the Retention Agreement, and the contents of the negotiations and discussions resulting in this Release Agreement and the Retention Agreement, shall be maintained as confidential by me and my agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company.

7. **Scope of Disclosure Restrictions** – I understand that nothing in this Release Agreement or elsewhere prohibits me from communicating with government agencies about possible violations of federal, state, or local laws or otherwise providing information to government agencies, filing a complaint with government agencies, or participating in government agency investigations or proceedings. I understand that I am not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information I obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding my confidentiality and nondisclosure obligations, I understand that I am hereby being advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

8. **Amendment and Waiver; Successors and Assigns** – This Release Agreement may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the Company. This Release Agreement is binding upon me and my agents, assigns, heirs, executors, successors and administrators, and any party acting on my behalf or by or through myself or my rights, and shall inure to the benefit of the Company's agents, assigns, successors and administrators. No delay or omission by the Company in exercising any right under this Release Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

9. **Validity** – Should any provision of this Release Agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this Release Agreement.

10. **Nature of Agreement –** I understand and agree that this Release Agreement does not constitute an admission of liability or wrongdoing on the part of the Company.

11. **Acknowledgments and Voluntary Assent –** I acknowledge that I have been given a reasonable amount of time to consider this Release Agreement. I affirm that no other promises or agreements of any kind have been made to or with me by any person or entity whatsoever to cause me to sign this Release Agreement, and that I fully understand the meaning and intent of this Release Agreement. I state and represent that I have had an opportunity to fully discuss and review the terms of this Release Agreement with an attorney. I further state and represent that I have carefully read this Release Agreement, understand the contents herein, freely and voluntarily assent to all of the terms and conditions hereof, and sign my name of my own free act.

12. **Applicable Law** – This Release Agreement shall be interpreted and construed by the laws of the State of North Carolina, without regard to conflict of laws provisions. I hereby irrevocably submit to and acknowledge and recognize the jurisdiction of the courts of the State of North Carolina, or if appropriate, a federal court located in the State of North Carolina (which courts, for purposes of this Release Agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this Release Agreement or the subject matter hereof.

13. **Entire Agreement** – This Release Agreement, together with the Retention Agreement and its other exhibits, contains and constitutes the entire understanding and agreement between the parties hereto with respect to the subject matter thereof and cancels any and all previous oral and written negotiations, agreements, and commitments in connection therewith.

14. **Tax Acknowledgement** – In connection with the Initial Retention Amount and Temporary Revised Salary Amount and any Second Retention Amount I may receive, each as described in the Retention Agreement, I understand that the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and that I shall be responsible for all applicable taxes with respect to such payments and benefits under applicable law. I further acknowledge that I am not relying upon the advice or representation of the Company with respect to the tax treatment of any payments or benefits described in the Retention Agreement.

I hereby agree to the terms and conditions set forth above.

/s/ Richard Katz	July 20, 2018
Richard Katz	Date

To be returned in a timely manner as set forth in the Retention Agreement.

Exhibit 10.6

RELEASE OF CLAIMS AGREEMENT

In exchange for the consideration set forth in the Retention Agreement dated July 20, 2018 (the "Retention Agreement") to which this Release of Claims Agreement (the "Release Agreement") is attached as Exhibit A, including receipt of the Initial Retention Amount (as defined therein) and eligibility to receive the Temporary Revised Salary Amount and Second Retention Amount (each as defined therein), all of which I acknowledge I would not otherwise be entitled to receive, I hereby agree as follows:

1. **Release** – I hereby fully, forever, irrevocably and unconditionally release, remise and discharge the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, managers, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that I ever had or now have against any or all of the Released Parties, including, but not limited to, any and all claims arising out of or relating to my employment with and/or separation from the Company, including, but not limited to, the following and any and all claims for or related to aiding or abetting the following, whether direct or derivative, and whether brought myself or by or through the Company or any trustee, assignee, agent, or other representative thereof: all claims under Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e et seq., the Americans With Disabilities Act of 1990, 42 U.S.C. § 12101 et seq., the Genetic Information Nondiscrimination Act of 2008, 42 U.S.C. § 2000ff et seq., the Family and Medical Leave Act, 29 U.S.C. § 2601 et seq., the Worker Adjustment and Retraining Notification Act ("WARN"), 29 U.S.C. § 2101 et seq., the Rehabilitation Act of 1973, 29 U.S.C. § 701 et seq., Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, 15 U.S.C. § 1681 et seq., and the Employee Retirement Income Security Act of 1974 ("ERISA"), 29 U.S.C. § 1001 et seq., all as amended; all claims arising out of the North Carolina Equal Employment Practices Act, N.C. Gen. Stat. § 143-422.1 et seq., the North Carolina Persons with Disabilities Protection Act, N.C. Gen. Stat. § 168A-1 et seq., North Carolina Retaliatory Employment Discrimination Act, N.C. Gen. Stat. § 95-240 et seq., N.C. Gen. Stat. § 50B-5.5 (North Carolina domestic violence and crime leave law), N.C. Gen. Stat. § 95-28.3 (North Carolina parental leave for involvement at schools law), N.C. Gen. Stat. § 95-28.1A (North Carolina genetic testing law), and N.C. Gen. Stat. § 95-28.1 (North Carolina sickle cell law), all as amended; all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, breach of duty, misrepresentation, fraud, fraudulent transfer, wrongful discharge, and breach of contract (including without limitation all claims arising out of or related to the Employment Agreement and/or any benefits to which I may otherwise have been entitled thereunder); all claims to any unvested ownership interest in the Company, contractual or otherwise; all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of my employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; provided, however, that nothing in this Release Agreement (a) prevents me from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that I acknowledge that I may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and I further waive any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding), or (b) releases claims to any payments to which I may be entitled under the Retention Agreement).

2. **Continuing Obligations** – I acknowledge and reaffirm my obligation to keep confidential and not to use or disclose any and all non-public information concerning the Company that I acquired during the course of my employment with the Company, including any non-public information concerning the Company's business affairs, business prospects, and financial condition, except as otherwise permitted by paragraph 7 below. Further, I acknowledge that I remain subject to any and all continuing confidentiality, non-competition and other obligations that I have pursuant to any previous agreement(s) with the Company ("Restrictive Covenant Obligations"), including, but not limited to, my obligations under Sections 5 and 6 of the Employment Agreement and any agreements referenced therein, which remain in full force and effect. For the avoidance of doubt, I further acknowledge that all of my Restrictive Covenant Obligations continue to apply during and after my engagement as a consultant to the Company pursuant to the Consulting Agreement attached as Exhibit C to the Retention Agreement.

3. **Non-Disparagement** – I understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 7 below, I will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition.

4. **Cooperation** – I agree that, to the extent permitted by law, I shall cooperate fully with the Company in the investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator. My full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with the Company's counsel, at reasonable times and locations designated by the Company, to investigate or prepare the Company's claims or defenses, to prepare for trial or discovery or an administrative hearing, mediation, arbitration or other proceeding and to act as a witness when requested by the Company. I further agree that, to the extent permitted by law, I will notify the Company promptly in the event that I am served with a subpoena (other than a subpoena issued by a government agency), or in the event that I am asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

5. **Return of Company Property and Information** – I agree that on the last day of my employment with the Company, or earlier upon request by the Company, I will return to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, flash drives and storage devices, wireless handheld devices, cellular phones, tablets, etc.), Company identification, and any other Company-owned property and information in my possession or control and that I will leave intact all electronic Company documents and information, including but not limited to those documents and that information that I developed or helped to develop during my employment, and I will not retain any copies. I further confirm that I will, on the last day of my employment with the Company, or earlier upon request by the Company, cancel all accounts for my benefit, if any, in the Company's name, including but not limited to, credit cards, telephone charge cards, cellular phone accounts, and computer accounts. Notwithstanding the foregoing, I understand that to the extent I am retained as a consultant to the Company after termination of my employment, and to the extent required in connection with the consulting services requested of me, I may retain property and information of the Company and accounts in the Company's name for the duration of the Consultation Period or until such earlier time as the Company may request, and return such property and information, and cancel such accounts, at the end of such period or upon such request, whichever is sooner.

6. **Confidentiality** – I understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 7 below, the terms and contents of this Release Agreement and the Retention Agreement, and the contents of the negotiations and discussions resulting in this Release Agreement and the Retention Agreement, shall be maintained as confidential by me and my agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company.

7. **Scope of Disclosure Restrictions** – I understand that nothing in this Release Agreement or elsewhere prohibits me from communicating with government agencies about possible violations of federal, state, or local laws or otherwise providing information to government agencies, filing a complaint with government agencies, or participating in government agency investigations or proceedings. I understand that I am not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information I obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding my confidentiality and nondisclosure obligations, I understand that I am hereby being advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

8. **Amendment and Waiver; Successors and Assigns** – This Release Agreement may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the Company. This Release Agreement is binding upon me and my agents, assigns, heirs, executors, successors and administrators, and any party acting on my behalf or by or through myself or my rights, and shall inure to the benefit of the Company's agents, assigns, successors and administrators. No delay or omission by the Company in exercising any right under this Release Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

9. **Validity** – Should any provision of this Release Agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this Release Agreement.

10. **Nature of Agreement –** I understand and agree that this Release Agreement does not constitute an admission of liability or wrongdoing on the part of the Company.

11. **Acknowledgments and Voluntary Assent –** I acknowledge that I have been given a reasonable amount of time to consider this Release Agreement. I affirm that no other promises or agreements of any kind have been made to or with me by any person or entity whatsoever to cause me to sign this Release Agreement, and that I fully understand the meaning and intent of this Release Agreement. I state and represent that I have had an opportunity to fully discuss and review the terms of this Release Agreement with an attorney. I further state and represent that I have carefully read this Release Agreement, understand the contents herein, freely and voluntarily assent to all of the terms and conditions hereof, and sign my name of my own free act.

12. **Applicable Law** – This Release Agreement shall be interpreted and construed by the laws of the State of North Carolina, without regard to conflict of laws provisions. I hereby irrevocably submit to and acknowledge and recognize the jurisdiction of the courts of the State of North Carolina, or if appropriate, a federal court located in the State of North Carolina (which courts, for purposes of this Release Agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this Release Agreement or the subject matter hereof.

13. **Entire Agreement** – This Release Agreement, together with the Retention Agreement and its other exhibits, contains and constitutes the entire understanding and agreement between the parties hereto with respect to the subject matter thereof and cancels any and all previous oral and written negotiations, agreements, and commitments in connection therewith.

14. **Tax Acknowledgement** – In connection with the Initial Retention Amount and Temporary Revised Salary Amount and any Second Retention Amount I may receive, each as described in the Retention Agreement, I understand that the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and that I shall be responsible for all applicable taxes with respect to such payments and benefits under applicable law. I further acknowledge that I am not relying upon the advice or representation of the Company with respect to the tax treatment of any payments or benefits described in the Retention Agreement.

I hereby agree to the terms and conditions set forth above.

/s/ Charles Nicolette	July 20, 2018
Charles Nicolette	Date

To be returned in a timely manner as set forth in the Retention Agreement.

Exhibit 10.7

ARGOS THERAPEUTICS, INC.

CONSULTING AGREEMENT

This Consulting Agreement (this "Agreement") is entered into as of August 29, 2018 (the "Effective Date") by and between Argos Therapeutics, Inc. (the "Company"), and Jeffrey Abbey (the "Consultant").

WHEREAS, the Consultant has certain knowledge and expertise regarding the Company as a result of having served as its President and Chief Executive Officer; and

WHEREAS, the Company desires to have the benefit of the Consultant's knowledge and experience, and the Consultant desires to provide strategic advisory and consulting services to the Company in connection with the wind-down of its regular business operations, all as hereinafter provided in this Agreement.

NOW, THEREFORE, in consideration of the promises and mutual agreements hereinafter set forth, the sufficiency of which are hereby acknowledged, the Company and the Consultant hereby agree as follows:

1. **Services.**

a. Services; Performance. Upon the Company's request, the Consultant shall render to the Company the strategic advisory and consulting services described in Attachment A to this Agreement and any additional consulting services as mutually agreed to by the Consultant and the Company from time to time in writing (collectively, the "Services"). The Consultant shall perform, during such hours as may be reasonably required for satisfactory performance of the Services, such Services in a professional manner and consistent with the highest industry standards. The Consultant shall be available to spend thirty (30) hours during the first 30 days during which this Agreement is in effect in performing the Services, and fifteen (15) hours during the next 30 days during which this Agreement is in effect and each following month during the Consultation Period in performing the Services, but the Company may request that the Consultant spend fewer or more hours in any month during the Consultation Period (if fewer are requested, the Consultant shall not work more hours than requested; if more are requested, the Consultant may choose to work such additional hours or not). The Consultant shall comply with all rules, procedures and standards promulgated from time to time by the Company with respect to the Consultant's access to and use of the Company's property, information, equipment and facilities in the course of the Consultant's provision of Services hereunder.

b. Non-Exclusive. The parties agree that, at all times during the term of this Agreement, (i) the Company shall be free to obtain consulting and advisory services from any third party, and (ii) the Consultant shall be free to provide consulting and advisory services to any third party, or to be employed by any third party, so long as the provision of such services by the Consultant does not conflict with (x) the Consultant's provision of Services to the Company as described in Section 1(a), or (y) the Consultant's continuing obligations to the Company as detailed in the Retention Agreement entered into by the Company and the Consultant to which this Consulting Agreement is attached as Exhibit C (the "Retention Agreement").

2. **Compensation and Reimbursement.**

a. Consulting Fees. As partial consideration for the performance of Services by the Consultant hereunder, the Company previously paid to the Consultant certain retention amounts pursuant to the Retention Agreement (the "Retention Amounts"). In addition, during the Consultation Period (as defined below), the Company shall also pay to the Consultant an hourly consulting fee in the amount of $600 (the "Consulting Fees"), to be paid as set forth in Section 2(c).

b. Expense Reimbursement. The Company shall reimburse the Consultant for all reasonable out-of-pocket expenses incurred by the Consultant in connection with the performance of the Services under this Agreement, so long as, in the case of any single expenditure over $1,000, it is approved in writing in advance by the Company.

c. Itemized Statements. At the end of any month in which the Consultant performs Services and incurs expenses in accordance with Section 2(b), the Consultant shall submit to the Company an itemized statement of the Services performed, including the number of hours worked and the project to which the Services relate, and the expenses incurred, including appropriate and reasonable documentation. The Company shall pay the Consultant the amount set forth on such itemized statement within forty-five (45) days after receipt.

d. No Employee Benefits. The Consultant's relationship with the Company will be that of an independent contractor, and the Consultant shall not, in connection with this relationship, be entitled to any benefits, coverages or privileges, including without limitation health insurance, social security, unemployment, workers compensation, pension payments, administrative support or office space on the Company's premises, made available to employees of the Company.

3. **Term and Termination.**

a. Consultation Period. Subject to the terms and conditions hereinafter set forth, the term of this Agreement shall commence immediately following the termination of Consultant's employment with the Company and shall continue for six (6) months thereafter unless earlier terminated in accordance with the provisions below (such period, the "Consultation Period"). The Consultation Period shall automatically terminate upon the death, physical incapacitation or mental incompetence of the Consultant. This Agreement may further be terminated prior to the six-month anniversary of the Effective Date in the following manner: (i) by the Company at any time upon written notice if the Consultant has materially breached this Agreement or the Retention Agreement, subject to the notice provision and cure period provided for in Section 3(b); (ii) by the Consultant at any time upon written notice if the Company has materially breached this Agreement or the Retention Agreement, subject to the notice provision and cure period provided for in Section 3(b); (iii) at any time upon the mutual written consent of the parties hereto; (iv) by the Company upon not less than ten (10) days' notice to the Consultant; or (v) after sixty (60) days following the Effective Date, by the Consultant upon not less than ten (10) days' notice to the Company.

b. Effects of Termination. In the event of any termination under this Section 3, the Consultant shall be entitled only to the Consulting Fees payable for the month in which termination occurs and expenses (including reimbursements) incurred in accordance with Section 2(a) and (b) prior to the effective date of such termination, and no further payments of any kind will be due under this Agreement. Such payment shall constitute full settlement of any and all claims of the Consultant of every description against the Company. In the event that either party materially breaches the Consulting Agreement, the non-breaching party shall provide written notice of same to the breaching party and provide the breaching party with a period of ten (10) business days to correct such deficiency. If the Consultant fails to correct such deficiency within this time period, the Consultant shall repay to the Company twenty-five percent (25%) of the Initial Retention Payment and the Second Retention Payment received under the Retention Agreement.

4. **Independent Contractor.** During the Consultation Period, the Consultant shall not be, and shall not be deemed to be, an employee of the Company. The Consultant's status and relationship with the Company shall be that of an independent contractor and consultant. The Consultant is not authorized to assume or create any obligation or responsibility, express or implied, on behalf of, or in the name of, the Company or to bind the Company in any manner. Nothing herein shall create, expressly or by implication, a partnership, joint venture or other association between the parties. The Consultant shall be solely responsible for payment of all charges and taxes arising from the payments to be made to the Consultant under this Agreement and the Consultant agrees that the Company shall have no obligation or liability with respect to such charges and/or taxes.

5. **Notice.** Any notice required or desired to be given shall be governed solely by this paragraph. Notice shall be deemed given only upon (a) mailing of any letter or instrument by overnight delivery with a reputable carrier or by registered mail, return receipt requested, postage prepaid by the sender, or (b) personal delivery.

If to the Consultant:
Jeffrey Abbey
_____
_____

If to the Company:
Argos Therapeutics, Inc.
4233 Technology Drive
Durham, NC 27704
Attn: Chair of the Board

From time to time, either party may, by written notice to the other in accordance with this Section 5, designate another address that shall thereupon become the effective address of such party for the purpose of this Section 5.

6. **Miscellaneous.** This Agreement, together with the Retention Agreement and all exhibits and attachments hereto and thereto, constitutes the entire understanding of the parties hereto with respect to the matters contained herein and supersedes all proposals and agreements, written or oral, and all other communications between the parties relating to the subject matter of this Agreement. For the avoidance of doubt, nothing herein supersedes the Retention Agreement (including without limitation the ongoing force and effect of the Consultant's continuing obligations). This Agreement shall be governed by and construed in accordance with the laws of the State of North Carolina without regard to its conflict of laws rules. The headings contained in this Agreement are for the convenience of the parties and are not to be construed as a substantive provision hereof. This Agreement may not be modified or amended except in writing signed or executed by the Consultant and the Company. In the event any provision of this Agreement is held to be unenforceable or invalid, such unenforceability or invalidity shall not affect any other provisions of this Agreement and such other provisions shall remain in full force and effect. If any provision of this Agreement is held to be excessively broad, it shall be reformed and construed by limiting and reducing it so as to be enforceable to the maximum extent permitted by law. This Agreement shall be binding upon, and inure to the benefit of, both parties hereto and their respective successors and assigns, including any corporation with or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the responsibility for actual performance of the Services is the Consultant's and may not be assigned or delegated by the Consultant to any other person or entity. This Agreement may be executed in counterparts and by facsimile, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the date first written above.

JEFFREY ABBEY	ARGOS THERAPEUTICS, INC.
/s/ Jeffrey Abbey	By: /s/ Hubert Birner Name: Hubert Birner Its: Chairman of the Board

[*Signature Page to Consulting Agreement*]

Attachment A

Description of Services

- The Consultant shall provide consulting and advisory services in connection with the Company's wind-down, including in the following areas:
    - Assisting with the termination of the Company's contracts and other relationships with employees and former employees and with third parties
    - Assisting with the winding up of the Company's physical operations, including the disposition of its equipment and other personal property and the removal of the Company's property from its leased premises
    - Assisting with the preparation of such information, reports, and other documentation as may be necessary in connection with the Company's wind-down and, to the extent the Company pursues a bankruptcy or similar filing, in connection with such filing
    - Assisting with such tax, accounting, legal, and other aspects of the Company's wind-down, including interfacing with professionals and other consultants retained by the Company

Exhibit 10.8

ARGOS THERAPEUTICS, INC.

CONSULTING AGREEMENT

This Consulting Agreement (this "Agreement") is entered into as of August 29, 2018 (the "Effective Date") by and between Argos Therapeutics, Inc. (the "Company"), and Richard Katz (the "Consultant").

WHEREAS, the Consultant has certain knowledge and expertise regarding the Company as a result of having served as its Vice President and Chief Financial Officer; and

WHEREAS, the Company desires to have the benefit of the Consultant's knowledge and experience, and the Consultant desires to provide strategic advisory and consulting services to the Company in connection with the wind-down of its regular business operations, all as hereinafter provided in this Agreement.

NOW, THEREFORE, in consideration of the promises and mutual agreements hereinafter set forth, the sufficiency of which are hereby acknowledged, the Company and the Consultant hereby agree as follows:

1. **Services.**

a. Services; Performance. Upon the Company's request, the Consultant shall render to the Company the strategic advisory and consulting services described in Attachment A to this Agreement and any additional consulting services as mutually agreed to by the Consultant and the Company from time to time in writing (collectively, the "Services"). The Consultant shall perform, during such hours as may be reasonably required for satisfactory performance of the Services, such Services in a professional manner and consistent with the highest industry standards. The Consultant shall be available to spend thirty (30) hours during the first 30 days during which this Agreement is in effect in performing the Services, and fifteen (15) hours during the next 30 days during which this Agreement is in effect and each following month during the Consultation Period in performing the Services, but the Company may request that the Consultant spend fewer or more hours in any month during the Consultation Period (if fewer are requested, the Consultant shall not work more hours than requested; if more are requested, the Consultant may choose to work such additional hours or not). The Consultant shall comply with all rules, procedures and standards promulgated from time to time by the Company with respect to the Consultant's access to and use of the Company's property, information, equipment and facilities in the course of the Consultant's provision of Services hereunder.

b. Non-Exclusive. The parties agree that, at all times during the term of this Agreement, (i) the Company shall be free to obtain consulting and advisory services from any third party, and (ii) the Consultant shall be free to provide consulting and advisory services to any third party, or to be employed by any third party, so long as the provision of such services by the Consultant does not conflict with (x) the Consultant's provision of Services to the Company as described in Section 1(a), or (y) the Consultant's continuing obligations to the Company as detailed in the Retention Agreement entered into by the Company and the Consultant to which this Consulting Agreement is attached as Exhibit C (the "Retention Agreement").

2. **Compensation and Reimbursement.**

a. Consulting Fees. As partial consideration for the performance of Services by the Consultant hereunder, the Company previously paid to the Consultant certain retention amounts pursuant to the Retention Agreement (the "Retention Amounts"). In addition, during the Consultation Period (as defined below), the Company shall also pay to the Consultant an hourly consulting fee in the amount of $400 (the "Consulting Fees"), to be paid as set forth in Section 2(c).

b. Expense Reimbursement. The Company shall reimburse the Consultant for all reasonable out-of-pocket expenses incurred by the Consultant in connection with the performance of the Services under this Agreement, so long as, in the case of any single expenditure over $1,000, it is approved in writing in advance by the Company.

c. Itemized Statements. At the end of any month in which the Consultant performs Services and incurs expenses in accordance with Section 2(b), the Consultant shall submit to the Company an itemized statement of the Services performed, including the number of hours worked and the project to which the Services relate, and the expenses incurred, including appropriate and reasonable documentation. The Company shall pay the Consultant the amount set forth on such itemized statement within forty-five (45) days after receipt.

d. No Employee Benefits. The Consultant's relationship with the Company will be that of an independent contractor, and the Consultant shall not, in connection with this relationship, be entitled to any benefits, coverages or privileges, including without limitation health insurance, social security, unemployment, workers compensation, pension payments, administrative support or office space on the Company's premises, made available to employees of the Company.

3. **Term and Termination.**

a. Consultation Period. Subject to the terms and conditions hereinafter set forth, the term of this Agreement shall commence immediately following the termination of Consultant's employment with the Company and shall continue for six (6) months thereafter unless earlier terminated in accordance with the provisions below (such period, the "Consultation Period"). The Consultation Period shall automatically terminate upon the death, physical incapacitation or mental incompetence of the Consultant. This Agreement may further be terminated prior to the six-month anniversary of the Effective Date in the following manner: (i) by the Company at any time upon written notice if the Consultant has materially breached this Agreement or the Retention Agreement, subject to the notice provision and cure period provided for in Section 3(b); (ii) by the Consultant at any time upon written notice if the Company has materially breached this Agreement or the Retention Agreement, subject to the notice provision and cure period provided for in Section 3(b); (iii) at any time upon the mutual written consent of the parties hereto; (iv) by the Company upon not less than ten (10) days' notice to the Consultant; or (v) after sixty (60) days following the Effective Date, by the Consultant upon not less than ten (10) days' notice to the Company.

b. Effects of Termination. In the event of any termination under this Section 3, the Consultant shall be entitled only to the Consulting Fees payable for the month in which termination occurs and expenses (including reimbursements) incurred in accordance with Section 2(a) and (b) prior to the effective date of such termination, and no further payments of any kind will be due under this Agreement. Such payment shall constitute full settlement of any and all claims of the Consultant of every description against the Company. In the event that either party materially breaches the Consulting Agreement, the non-breaching party shall provide written notice of same to the breaching party and provide the breaching party with a period of ten (10) business days to correct such deficiency. If the Consultant fails to correct such deficiency within this time period, the Consultant shall repay to the Company twenty-five percent (25%) of the Initial Retention Payment and the Second Retention Payment received under the Retention Agreement.

4. **Independent Contractor.** During the Consultation Period, the Consultant shall not be, and shall not be deemed to be, an employee of the Company. The Consultant's status and relationship with the Company shall be that of an independent contractor and consultant. The Consultant is not authorized to assume or create any obligation or responsibility, express or implied, on behalf of, or in the name of, the Company or to bind the Company in any manner. Nothing herein shall create, expressly or by implication, a partnership, joint venture or other association between the parties. The Consultant shall be solely responsible for payment of all charges and taxes arising from the payments to be made to the Consultant under this Agreement and the Consultant agrees that the Company shall have no obligation or liability with respect to such charges and/or taxes.

5. **Notice.** Any notice required or desired to be given shall be governed solely by this paragraph. Notice shall be deemed given only upon (a) mailing of any letter or instrument by overnight delivery with a reputable carrier or by registered mail, return receipt requested, postage prepaid by the sender, or (b) personal delivery.

If to the Consultant:
Richard Katz
_____
_____

If to the Company:
Argos Therapeutics, Inc.
4233 Technology Drive
Durham, NC 27704
Attn: Chair of the Board

From time to time, either party may, by written notice to the other in accordance with this Section 5, designate another address that shall thereupon become the effective address of such party for the purpose of this Section 5.

6. **Miscellaneous.** This Agreement, together with the Retention Agreement and all exhibits and attachments hereto and thereto, constitutes the entire understanding of the parties hereto with respect to the matters contained herein and supersedes all proposals and agreements, written or oral, and all other communications between the parties relating to the subject matter of this Agreement. For the avoidance of doubt, nothing herein supersedes the Retention Agreement (including without limitation the ongoing force and effect of the Consultant's continuing obligations). This Agreement shall be governed by and construed in accordance with the laws of the State of North Carolina without regard to its conflict of laws rules. The headings contained in this Agreement are for the convenience of the parties and are not to be construed as a substantive provision hereof. This Agreement may not be modified or amended except in writing signed or executed by the Consultant and the Company. In the event any provision of this Agreement is held to be unenforceable or invalid, such unenforceability or invalidity shall not affect any other provisions of this Agreement and such other provisions shall remain in full force and effect. If any provision of this Agreement is held to be excessively broad, it shall be reformed and construed by limiting and reducing it so as to be enforceable to the maximum extent permitted by law. This Agreement shall be binding upon, and inure to the benefit of, both parties hereto and their respective successors and assigns, including any corporation with or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the responsibility for actual performance of the Services is the Consultant's and may not be assigned or delegated by the Consultant to any other person or entity. This Agreement may be executed in counterparts and by facsimile, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the date first written above.

RICHARD KATZ	ARGOS THERAPEUTICS, INC.
/s/ Richard Katz	By: /s/ Jeff Abbey Name: Jeff Abbey

[*Signature Page to Consulting Agreement*]

Attachment A

Description of Services

- The Consultant shall provide consulting and advisory services in connection with the Company's wind-down, including in the following areas:
    - Assisting with the termination of the Company's contracts and other relationships with employees and former employees and with third parties
    - Assisting with the winding up of the Company's physical operations, including the disposition of its equipment and other personal property and the removal of the Company's property from its leased premises
    - Assisting with the preparation of such information, reports, and other documentation as may be necessary in connection with the Company's wind-down and, to the extent the Company pursues a bankruptcy or similar filing, in connection with such filing
    - Assisting with such tax, accounting, legal, and other aspects of the Company's wind-down, including interfacing with professionals and other consultants retained by the Company

Exhibit 10.9

ARGOS THERAPEUTICS, INC.

CONSULTING AGREEMENT

This Consulting Agreement (this "Agreement") is entered into as of August 29, 2018 (the "Effective Date") by and between Argos Therapeutics, Inc. (the "Company"), and Charles Nicolette (the "Consultant").

WHEREAS, the Consultant has certain knowledge and expertise regarding the Company as a result of having served as its Vice President of Research and Development and Chief Scientific Officer; and

WHEREAS, the Company desires to have the benefit of the Consultant's knowledge and experience, and the Consultant desires to provide strategic advisory and consulting services to the Company in connection with the wind-down of its regular business operations, all as hereinafter provided in this Agreement.

NOW, THEREFORE, in consideration of the promises and mutual agreements hereinafter set forth, the sufficiency of which are hereby acknowledged, the Company and the Consultant hereby agree as follows:

1. **Services.**

a. Services; Performance. Upon the Company's request, the Consultant shall render to the Company the strategic advisory and consulting services described in Attachment A to this Agreement and any additional consulting services as mutually agreed to by the Consultant and the Company from time to time in writing (collectively, the "Services"). The Consultant shall perform, during such hours as may be reasonably required for satisfactory performance of the Services, such Services in a professional manner and consistent with the highest industry standards. The Consultant shall be available to spend thirty (30) hours during the first 30 days during which this Agreement is in effect in performing the Services, and fifteen (15) hours during the next 30 days during which this Agreement is in effect and each following month during the Consultation Period in performing the Services, but the Company may request that the Consultant spend fewer or more hours in any month during the Consultation Period (if fewer are requested, the Consultant shall not work more hours than requested; if more are requested, the Consultant may choose to work such additional hours or not). The Consultant shall comply with all rules, procedures and standards promulgated from time to time by the Company with respect to the Consultant's access to and use of the Company's property, information, equipment and facilities in the course of the Consultant's provision of Services hereunder.

b. Non-Exclusive. The parties agree that, at all times during the term of this Agreement, (i) the Company shall be free to obtain consulting and advisory services from any third party, and (ii) the Consultant shall be free to provide consulting and advisory services to any third party, or to be employed by any third party, so long as the provision of such services by the Consultant does not conflict with (x) the Consultant's provision of Services to the Company as described in Section 1(a), or (y) the Consultant's continuing obligations to the Company as detailed in the Retention Agreement entered into by the Company and the Consultant to which this Consulting Agreement is attached as Exhibit C (the "Retention Agreement").

2. **Compensation and Reimbursement.**

a. Consulting Fees. As partial consideration for the performance of Services by the Consultant hereunder, the Company previously paid to the Consultant certain retention amounts pursuant to the Retention Agreement (the "Retention Amounts"). In addition, during the Consultation Period (as defined below), the Company shall also pay to the Consultant an hourly consulting fee in the amount of $475 (the "Consulting Fees"), to be paid as set forth in Section 2(c).

b. Expense Reimbursement. The Company shall reimburse the Consultant for all reasonable out-of-pocket expenses incurred by the Consultant in connection with the performance of the Services under this Agreement, so long as, in the case of any single expenditure over $1,000, it is approved in writing in advance by the Company.

c. Itemized Statements. At the end of any month in which the Consultant performs Services and incurs expenses in accordance with Section 2(b), the Consultant shall submit to the Company an itemized statement of the Services performed, including the number of hours worked and the project to which the Services relate, and the expenses incurred, including appropriate and reasonable documentation. The Company shall pay the Consultant the amount set forth on such itemized statement within forty-five (45) days after receipt.

d. No Employee Benefits. The Consultant's relationship with the Company will be that of an independent contractor, and the Consultant shall not, in connection with this relationship, be entitled to any benefits, coverages or privileges, including without limitation health insurance, social security, unemployment, workers compensation, pension payments, administrative support or office space on the Company's premises, made available to employees of the Company.

3. **Term and Termination.**

a. Consultation Period. Subject to the terms and conditions hereinafter set forth, the term of this Agreement shall commence immediately following the termination of Consultant's employment with the Company and shall continue for six (6) months thereafter unless earlier terminated in accordance with the provisions below (such period, the "Consultation Period"). The Consultation Period shall automatically terminate upon the death, physical incapacitation or mental incompetence of the Consultant. This Agreement may further be terminated prior to the six-month anniversary of the Effective Date in the following manner: (i) by the Company at any time upon written notice if the Consultant has materially breached this Agreement or the Retention Agreement, subject to the notice provision and cure period provided for in Section 3(b); (ii) by the Consultant at any time upon written notice if the Company has materially breached this Agreement or the Retention Agreement, subject to the notice provision and cure period provided for in Section 3(b); (iii) at any time upon the mutual written consent of the parties hereto; (iv) by the Company upon not less than ten (10) days' notice to the Consultant; or (v) after sixty (60) days following the Effective Date, by the Consultant upon not less than ten (10) days' notice to the Company.

b. Effects of Termination. In the event of any termination under this Section 3, the Consultant shall be entitled only to the Consulting Fees payable for the month in which termination occurs and expenses (including reimbursements) incurred in accordance with Section 2(a) and (b) prior to the effective date of such termination, and no further payments of any kind will be due under this Agreement. Such payment shall constitute full settlement of any and all claims of the Consultant of every description against the Company. In the event that either party materially breaches the Consulting Agreement, the non-breaching party shall provide written notice of same to the breaching party and provide the breaching party with a period of ten (10) business days to correct such deficiency. If the Consultant fails to correct such deficiency within this time period, the Consultant shall repay to the Company twenty-five percent (25%) of the Initial Retention Payment and the Second Retention Payment received under the Retention Agreement.

4. **Independent Contractor.** During the Consultation Period, the Consultant shall not be, and shall not be deemed to be, an employee of the Company. The Consultant's status and relationship with the Company shall be that of an independent contractor and consultant. The Consultant is not authorized to assume or create any obligation or responsibility, express or implied, on behalf of, or in the name of, the Company or to bind the Company in any manner. Nothing herein shall create, expressly or by implication, a partnership, joint venture or other association between the parties. The Consultant shall be solely responsible for payment of all charges and taxes arising from the payments to be made to the Consultant under this Agreement and the Consultant agrees that the Company shall have no obligation or liability with respect to such charges and/or taxes.

5. **Notice.** Any notice required or desired to be given shall be governed solely by this paragraph. Notice shall be deemed given only upon (a) mailing of any letter or instrument by overnight delivery with a reputable carrier or by registered mail, return receipt requested, postage prepaid by the sender, or (b) personal delivery.

If to the Consultant:
Charles Nicolette
_____
_____

If to the Company:
Argos Therapeutics, Inc.
4233 Technology Drive
Durham, NC 27704
Attn: Chair of the Board

From time to time, either party may, by written notice to the other in accordance with this Section 5, designate another address that shall thereupon become the effective address of such party for the purpose of this Section 5.

6. **Miscellaneous.** This Agreement, together with the Retention Agreement and all exhibits and attachments hereto and thereto, constitutes the entire understanding of the parties hereto with respect to the matters contained herein and supersedes all proposals and agreements, written or oral, and all other communications between the parties relating to the subject matter of this Agreement. For the avoidance of doubt, nothing herein supersedes the Retention Agreement (including without limitation the ongoing force and effect of the Consultant's continuing obligations). This Agreement shall be governed by and construed in accordance with the laws of the State of North Carolina without regard to its conflict of laws rules. The headings contained in this Agreement are for the convenience of the parties and are not to be construed as a substantive provision hereof. This Agreement may not be modified or amended except in writing signed or executed by the Consultant and the Company. In the event any provision of this Agreement is held to be unenforceable or invalid, such unenforceability or invalidity shall not affect any other provisions of this Agreement and such other provisions shall remain in full force and effect. If any provision of this Agreement is held to be excessively broad, it shall be reformed and construed by limiting and reducing it so as to be enforceable to the maximum extent permitted by law. This Agreement shall be binding upon, and inure to the benefit of, both parties hereto and their respective successors and assigns, including any corporation with or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the responsibility for actual performance of the Services is the Consultant's and may not be assigned or delegated by the Consultant to any other person or entity. This Agreement may be executed in counterparts and by facsimile, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the date first written above.

CHARLES NICOLETTE	ARGOS THERAPEUTICS, INC.
/s/ Charles Nicolette	By: /s/ Jeff Abbey Name: Jeff Abbey

[*Signature Page to Consulting Agreement*]

Attachment A

Description of Services

- The Consultant shall provide consulting and advisory services in connection with the Company's wind-down, including in the following areas:
    - Assisting with the termination of the Company's contracts and other relationships with employees and former employees and with third parties
    - Assisting with the winding up of the Company's physical operations, including the disposition of its equipment and other personal property and the removal of the Company's property from its leased premises
    - Assisting with the preparation of such information, reports, and other documentation as may be necessary in connection with the Company's wind-down and, to the extent the Company pursues a bankruptcy or similar filing, in connection with such filing
    - Assisting with such tax, accounting, legal, and other aspects of the Company's wind-down, including interfacing with professionals and other consultants retained by the Company

Exhibit 31.1

CERTIFICATIONS

I, Jeffrey D. Abbey, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Argos Therapeutics, Inc.;

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 Rule 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.

By: /s/ JEFFREY D. ABBEY
Jeffrey D. Abbey
President and Chief Executive Officer
(Principal Executive Officer)

Date: November 19, 2018

Exhibit 31.2

CERTIFICATIONS

I, Richard D. Katz, M.D., certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Argos Therapeutics, Inc.;

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 Rule 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.

By: /s/ RICHARD D. KATZ, M.D.
Richard D. Katz, M.D.
Vice President and Chief Financial Officer
(Principal Financial Officer)

Date: November 19, 2018

Exhibit 32.1

CERTIFICATIONS PURSUANT TO 18 U.S.C. 1350

The undersigned, the Chief Executive Officer and the Vice President and Chief Financial Officer of Argos Therapeutics, Inc. (the "Company"), each hereby certifies that, to his knowledge on the date hereof:

(a) the Quarterly Report on Form 10-Q of the Company for the period ended September 30, 2018 filed on the date hereof with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(b) information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

November 19, 2018

By: /s/ JEFFREY D. ABBEY
Jeffrey D. Abbey
President and Chief Executive Officer

November 19, 2018

By: /s/ RICHARD D. KATZ, M.D.
Richard D. Katz, M.D.
Vice President and Chief Financial Officer