Kurkijarvi Kalevi
Form 4
November 16, 2018

FORM 4

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. *See* Instruction 1(b).

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL
OMB Number: 3235-0287
Expires: January 31, 2005
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(Print or Type Responses)

1. Name and Address of Reporting Person *
Kurkijarvi Kalevi

(Last) (First) (Middle)

C/O FIBROGEN, INC., 409 ILLINOIS ST.

(Street)

SAN FRANCISCO, CA 94158

(City) (State) (Zip)

2. Issuer Name **and** Ticker or Trading Symbol
FIBROGEN INC [FGEN]

3. Date of Earliest Transaction (Month/Day/Year)
11/15/2018

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

__X__ Director _____ 10% Owner
_____ Officer (give title below) _____ Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)
_X_ Form filed by One Reporting Person
___ Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1.Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	11/15/2018		M		4,000	A	$ 2.9	27,700	D	
Common Stock	11/15/2018		S (1)		3,400	D	$ 39.67 (2)	24,300	D	
Common Stock	11/15/2018		S (1)		600	D	$ 40.36 (3)	23,700	D	

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

Persons who respond to the collection of information contained in this form are not

SEC 1474 (9-02)

required to respond unless the form displays a currently valid OMB control number.

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(*e.g.*, puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Underlying Securities (Instr. 3 and 4)		8. P Der Sec (Ins
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares	
Stock Option (Right to Buy)	$ 2.9	11/15/2018		M			4,000	(4)	06/24/2020	Common Stock	4,000	

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Kurkijarvi Kalevi C/O FIBROGEN, INC. 409 ILLINOIS ST. SAN FRANCISCO, CA 94158	X			

Signatures

/s/ Dorothy Pacini, Attorney-in-fact	11/16/2018
**Signature of Reporting Person	Date

Explanation of Responses:

* If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) Shares sold pursuant to a 10b5-1 plan.

(2) The shares were sold at prices ranging from $39.24 to $40.23. The reporting person will provide upon request to the SEC, the issuer or security holder of the issuer, full information regarding the number of shares sold at each separate price.

(3) The shares were sold at prices ranging from $40.26 to $40.50. The reporting person will provide upon request to the SEC, the issuer or security holder of the issuer, full information regarding the number of shares sold at each separate price.

(4) Fully vested.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

 background-color: White">Impairment charge (4,510,000) - - Balance at December 31, 2018, net 15,736,491 1,976,101 568,292

6. PROPERTY AND EQUIPMENT

	Year Ended December 31,	
	2018	2017
Machinery and equipment (5-7 year life)	$2,596,170	$2,495,959
Furniture and fixtures (3-5 year life)	267,712	248,709
Leasehold improvements (5-7 year life)	289,004	269,819
	3,152,886	3,014,487
Less accumulated depreciation and amortization	(2,968,259)	(2,838,716)
Total	$184,627	$175,771

7. OTHER ACCRUED LIABILITIES

Other accrued liabilities at *December 31, 2018* and *2017* include the following:

	Year Ended December 31,	
	2018	2017
Amounts due to contract research organizations and other contractual agreements	$749,369	$665,373
Accrued payroll and related benefits	1,592,590	1,258,265
Accrued professional fees	198,654	264,668
Other	45,285	94,521
Total	$2,585,898	$2,282,827

8. NOTES PAYABLE

Horizon Credit Agreement

On June 27, 2018, the Company entered into a loan agreement with Horizon Technology Finance Corporation (“Horizon”) that provided $10 million in new capital (the “Horizon Credit Agreement”). The Company drew down $10 million upon closing of the Horizon Credit Agreement on June 27, 2018. The Company will use the funding provided under the Horizon Credit Agreement for working capital and advancement of its product pipeline.

The obligations under the Horizon Credit Agreement are secured by a first-priority security interest in substantially all assets of Celsion other than intellectual property assets. The obligations will bear interest at a rate calculated based on one-month LIBOR plus 7.625%. The effective interest rate at December 31, 2018 was 9.98%. Payments under the loan agreement are interest only for the first twenty-four (24) months after loan closing, followed by a 24-month amortization period of principal and interest through the scheduled maturity date. At its option, the Company can prepay all of the outstanding principal balance by prepaying the outstanding principal balance and an amount equal to 1-3% of the outstanding principal balance at that time, based on the amount of time prior to the maturity date of the notes.

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The Horizon Credit Agreement contains customary representations, warranties and affirmative and negative covenants including, among other things, covenants that limit or restrict Celsion's ability to grant liens, incur indebtedness, make certain restricted payments, merge or consolidate and make dispositions of assets. Upon the occurrence of an event of default under the Horizon Credit Agreement, the lenders may cease making loans, terminate the Horizon Credit Agreement, declare all amounts outstanding to be immediately due and payable and foreclose on or liquidate Celsion's assets that comprise the lenders' collateral. The Horizon Credit Agreement specifies a number of events of default (some of which are subject to applicable grace or cure periods), including, among other things, non-payment defaults, covenant defaults, a material adverse effect on Celsion or its assets, cross-defaults to other material indebtedness, bankruptcy and insolvency defaults and material judgment defaults.

As a fee in connection with the Horizon Credit Agreement, Celsion issued Horizon warrants exercisable for a total of 190,114 shares of Celsion's common stock (the "Horizon Warrants") at a per share exercise price of $2.63. The Horizon Warrants are immediately exercisable for cash or by net exercise from the date of grant and will expire after ten years from the date of grant. Celsion registered the Horizon Warrants on Form S-3 (File No. 333 - 227236) filed with the Securities and Exchange Commission on September 7, 2018 and declared effective on October 10, 2018. The Company valued the Horizon Warrants issued using the Black-Scholes option pricing model and recorded a total of $507,116 as a direct deduction from the debt liability consistent with the presentation of a debt discount and are being amortized as interest expense using the effective interest method over the life of the loan.

In connection with the Horizon Credit Agreement, the Company incurred financing fees and expenses totaling $175,000 which are recorded and classified as debt discount. In addition, the Company paid loan origination fees of $100,000 which has been recorded and classified as debt discount. These debt discount amounts totaling $782,116 are being amortized as interest expense using the effective interest method over the life of the loan. Also, in connection with each of the Horizon Credit Agreements, the Company is required to pay an end of term charge equal to 4.0% of the original loan amount at time of maturity. Therefore, these amounts totaling $400,000 are being amortized as interest expense using the effective interest method over the life of the loan.

During 2018, the Company incurred $512,872 in interest expense and amortized $199,153 respectively, as interest expense for debt discounts and end of term charges in connection with the Horizon Credit Agreement.

Following is a schedule of future principle payments, net of unamortized debt discounts and amortized end of term charges, due on the Horizon Credit Agreement:

	For the year ending

	December 31,
2019	$-
2020	-
2021	4,583,333
2022	5,000,000
2023 and thereafter	416,667
Subtotal of future principle payments	10,000,000
Unamortized debt issuance costs, net	(582,963)
Total	$9,417,037

Hercules Credit Agreement

In November 2013, the Company entered into a loan agreement with Hercules Technology Growth Capital, Inc. (Hercules) which permits up to $20 million in capital to be distributed in multiple tranches (the Hercules Credit Agreement). The Company drew the first tranche of $5 million upon closing of the Hercules Credit Agreement in November 2013 and used approximately $4 million of the proceeds to repay the outstanding obligations under its loan agreement with Oxford Finance LLC and Horizon Technology Finance Corporation as discussed further below. On June 10, 2014, the Company closed the second $5 million tranche under the Hercules Credit Agreement. The proceeds were used to fund the $3.0 million upfront cash payment associated with Celsion’s acquisition of EGEN, as well as the Company’s transaction costs associated with the EGEN acquisition. Upon the closing of the second tranche, the Company had drawn down a total of $10 million under the Hercules Credit Agreement.

The obligations under the Hercules Credit Agreement were in the form of secured indebtedness bearing interest at a calculated prime-based variable rate (11.25% per annum since inception through December 17, 2015, 11.50% from December 18, 2015 through December 15, 2016 and 11.75% since). Payments under the loan agreement were interest only for the first twelve months after loan closing, followed by a 30 -month amortization period of principal and interest through the scheduled maturity date of June 1, 2017. In connection with the Hercules Credit Agreement, the Company incurred cash expenses of $122,378 which were recorded as deferred financing fees. These deferred financing fees were amortized as interest expense using the effective interest method over the life of the loan. In addition, the Company paid loan origination fees of $230,000 which has been classified as debt discount. This amount is being amortized as interest expense using the effective interest method over the life of the loan.

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As a fee associated with the Hercules Credit Agreement, the Company issued Hercules a warrant for a total of 6,963 shares of the Company’s common stock (the Hercules Warrant) at a per share exercise price of $50.26, exercisable for cash or by net exercise from November 25, 2013. Upon the closing of the second tranche on June 10, 2014, this warrant became exercisable for an additional 6,963 shares of the Company’s common stock. The Hercules Warrant expired on November 25, 2018. Hercules has certain rights to register the common stock underlying the Hercules Warrant pursuant to a Registration Rights Agreement with the Company dated November 25, 2013. The registration rights expired on the date when such stock may be sold under Rule 144 without restriction or upon the first-year anniversary of the registration statement for such stock, whichever is earlier. The common stock issuable pursuant to the Hercules Warrant was filed pursuant to Rule 415 under the Securities Act of 1933 on the Prospectus for Registration Statement No. 333 - 193936 and was declared effective on September 30, 2014. The Company valued the Hercules Warrants issued using the Black-Scholes option pricing model and recorded a total of $476,261 as a direct deduction from the debt liability consistent with the presentation of a debt discount and are being amortized as interest expense using the effective interest method over the life of the loan. Also, in connection with each of the $5.0 million tranches, the Company was required to pay an end of term charge equal to 3.5% of each original loan amount at time of maturity. Therefore, these amounts totaling $350,000 were amortized as interest expense using the effective interest method over the life of the loan. The loan balance and end of term charges on the Hercules Credit Agreement was paid in full in June 2017. For 2017, the Company incurred $56,386 in interest expense and amortized $35,370 as interest expense for deferred fees, debt discount and end of term charges in connection with the Hercules Credit Agreement.

9. INCOME TAXES

On December 22, 2017, the President of the United States signed into law the Tax Reform Act. The Tax Reform Act significantly changes U.S. tax law by, among other things, lowering corporate income tax rates, implementing a quasi-territorial tax system, providing a one -time transition toll charge on foreign earnings, creating a new limitation on the deductibility of interest expenses and modifying the limitation on officer compensation. The Tax Reform Act permanently reduces the U.S. corporate income tax rate from a maximum of 35% to a flat 21% rate, effective January 1, 2018.

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The income tax provision (benefit) for the years ended December 31, 2018 and 2017 consists of the following:

	2018	2017
Federal		
Current	$-	$ -
Deferred	-	-
State and Local	-	-
Current	(10,419,000)	-
Deferred	-	-
Effective tax rate	$(10,419,000)	-

A reconciliation of the Company's statutory tax rate to the effective rate for the years ended December 31, 2018 and 2017 is as follows:

	2018	2017
Federal statutory rate	21.0 %	21.0 %
State taxes, net of federal tax benefit	36.9	6.6
Permanent differences	(3.8)	-
Other	(9.4)	-
Change in valuation allowance and deferred rate change, net	2.0	(27.6)
Effective tax rate	46.7 %	- %

The components of the Company's deferred tax asset as of December 31, 2018 and 2017 are as follows:

	December 31, 2018	2017
Net operating loss carryforwards	$51,498,000	$62,216,000
Other Deferred tax assets, net	1,092,000	2,415,000
Subtotal	52,590,000	64,631,000
Valuation allowance	(52,590,000)	(64,631,000)
Total deferred tax asset	$-	$-

The evaluation of the realizability of such deferred tax assets in future periods is made based upon a variety of factors that affect the Company's ability to generate future taxable income, such as intent and ability to sell assets and historical and projected operating performance. At this time, the Company has established a valuation reserve for all of its deferred tax assets. Such tax assets are available to be recognized and benefit future periods. As of December 31, 2018, the Company had net operating losses of approximately $229.7 million of which $222.2 million, if unused, will expire starting in 2023 through 2037. The Federal net operating loss generated for the year ended December 31, 2018 of approximately $7.5 million can be carried forward indefinitely. However, the deduction for net operating losses incurred in tax years beginning after January 1, 2018 is limited to 80% of annual taxable income

During 2018, 2017 and in prior years, the Company performed analyses to determine if there were changes in ownership, as defined by Section 382 of the Internal Revenue Code that would limit its ability to utilize certain net operating loss and tax credit carry forwards. The Company determined that it experienced ownership changes, as defined by Section 382, in connection with certain common stock offerings in July 2011, February 2013, June 2013, June 2015, February 2017, June 2017, October 2017 and August 2018. As a result, the utilization of the Company's federal tax net operating loss carry forwards generated prior to the ownership changes are limited. As of December 31, 2018, the Company has net operating loss carry forwards for U.S. federal and state tax purposes of approximately $233 million, before excluding net operating losses that have been limited as a result of Section 382 limitations. The annual limitation due to Section 382 for net operating loss carry forward utilization is approximately $4.2 million per year for approximately $90 million in net operating loss carry forwards existing at the ownership change occurring in July 2011, approximately $1.4 million per year for approximately $34 million of additional net operating losses occurring from July 2011 to the ownership change that occurred in February 2013, approximately $1.5 million per year for approximately $4 million of additional net operating losses occurring from February 2013 to the ownership change that occurred in June 2013, approximately $1.6 million per year for approximately $40 million of additional net operating losses occurring from June 2013 to the ownership change that occurred in June 2015, approximately $0.3 million per year for approximately $35 million of additional net operating losses occurring from June 2015 to the ownership change that occurred in February 2017, approximately $0.3 million per year for approximately $7 million of additional net operating losses occurring from February 2017 to the ownership change that occurred in June 2017, approximately $0.8 million per year for approximately $5 million of additional net operating losses occurring from June 2017 to the ownership change that occurred in October 2017, and approximately $1.5 million per year for approximately $30 million of additional net operating losses occurring from October 2017 to the ownership change that occurred in August 2018. The utilization of these net operating loss carry forwards may be further limited if the Company experiences future ownership changes as defined in Section 382 of the Internal Revenue Code.

Sale of New Jersey Net Operating Losses

The Company received approval to sell a portion of the Company's New Jersey NOLs as part of the Technology Business Tax Certificate Program sponsored by The New Jersey Economic Development Authority. Under the program, emerging biotechnology companies with unused NOLs and unused research and development credits are allowed to sell these benefits to other companies. In December 2018, the Company received cash proceeds of $10.4 million from the sale of NOLs. Such proceeds are reflected as a tax benefit for the year ended December 31, 2018.

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10. STOCKHOLDERS' EQUITY

In September 2018, the Company filed with the SEC a new $75 million shelf registration statement on Form S-3 (the 2018 Shelf Registration Statement) (File No. 333-227236) that allows the Company to issue any combination of common stock, preferred stock or warrants to purchase common stock or preferred stock. This shelf registration was declared effective on October 12, 2018 and will expire three years from that date.

Increase in the Number of Authorized Shares

At the 2016 Annual Meeting of Stockholders of the Company in June 2016, the Company's stockholders approved an increase in the number of the authorized shares of the Company's common stock from 75,000,000 shares to 112,500,000 shares. The number of the authorized shares of preferred stock remains at 100,000 shares. The aggregate number of shares of all classes of stock that the Company may issue, after giving effect to such amendment as approved by the stockholders, will be 112,600,000 shares.

Reverse Stock Split

On May 26, 2017, the Company effected a 14-for-1 reverse stock split of its common stock which was made effective for trading purposes as of the commencement of trading on May 30, 2017. As of that date, each 14 shares of issued and outstanding common stock and equivalents was consolidated into one share of common stock. All shares have been restated to reflect the effects of the 14 -for- 1 reverse stock split. In addition, at the market open on May 30, 2017, the Company's common stock started trading under a new CUSIP number 15117N503 although the Company's ticker symbol, CLSN, remained unchanged.

The reverse stock split was previously approved by the Company's stockholders at the 2017 Annual Meeting held on May 16, 2017, and the Company subsequently filed a Certificate of Amendment to its Certificate of Incorporation to effect the stock consolidation. The primary reasons for the reverse stock split and the amendment are:

To increase the market price of the Company's common stock making it more attractive to a broader range of institutional and other investors, and
To provide the Company with additional capital resources and flexibility sufficient to execute its business plans including the establishment of strategic relationships with other companies and to ensure its ability to raise additional capital as necessary.

Immediately prior to the reverse stock split, the Company had 56,982,418 shares of common stock outstanding which consolidated into 4,070,172 shares of the Company’s common stock. No fractional shares were issued in connection with the reverse stock split. Holders of fractional shares have been paid out in cash for the fractional portion with the Company’s overall exposure for such payouts consisting of a nominal amount. The number of outstanding options and warrants were adjusted accordingly, with outstanding options being reduced from approximately 2.4 million to approximately 0.2 million and outstanding warrants being reduced from approximately 33.5 million to approximately 2.4 million.

October 2017 Underwritten Offering

On October 27, 2017, the Company entered into an underwriting agreement (the “Underwriting Agreement”) with Oppenheimer & Co. Inc. (the “Underwriter”), relating to the issuance and sale (the “Offering”) of 2,640,000 shares (the “Shares”) of the Company’s common stock, $0.01 par value per share (the “Common Stock”), and warrants to purchase an aggregate of 1,320,000 shares of Common Stock. Each share of Common Stock is being sold together with 0.5 warrants (the “Investor Warrants”), each whole Investor Warrant being exercisable for one share of Common Stock, at an offering price of $2.50 per share and related Investor Warrants.

Pursuant to the terms of the Underwriting Agreement, the Underwriter agreed to purchase the Shares and related Investor Warrants from the Company at a price of $2.325 per share and related Investor Warrants. Each Investor Warrant is exercisable six months from the date of issuance. The Investor Warrants have an exercise price of $3.00 per whole share and expire five years from the date first exercisable. On October 26, 2018, the Company and the holders of the Investor Warrants entered into Warrant Exchange Agreements (the “Exchange Agreements”) whereby each of the holders of the Investor Warrants elected to surrender Investor Warrants, representing 1,320,000 shares of Common Stock collectively. In exchange for the surrender of the Investor Warrants, these holders received 820,714 shares of Common Stock. In connection with this exchange and the exchange discussed below with 321,428 warrants from the February 14, 2017 Public Offering, the Company incurred approximately $130,000 of broker and legal fees which are presented as a component of stockholders equity.

The Company received $6.6 million of gross proceeds from the sale of the Shares and Investor Warrant. This Offering was made pursuant to the Company’s effective shelf registration statement on Form S- 3 (File No. 333 - 206789) filed with the Securities and Exchange Commission on September 4, 2015, and declared effective on September 25, 2015, including the base prospectus dated September 25, 2017 included therein and the related prospectus supplement. The Company also issued to the Underwriter warrants to purchase up to 66,000 shares of the Company’s common stock, such issuance being exempt from registration pursuant to Section 4 (a)(2) of the Securities Act. Each Underwriter warrant is exercisable six months from the date of issuance, have an exercise price of $2.87 per whole share, and expire five years from the date first exercisable.

July 6, 2017 Common Stock Offering

On July 6, 2017, the Company entered into a securities purchase agreement with several investors, pursuant to which the Company agreed to issue and sell, in a registered direct offering, an aggregate of 2,050,000 shares of common stock of the Company at an offering price of $2.07 per share for gross proceeds of $4,243,500 before the deduction of the placement agent fee and offering expenses. In addition, the Company sold Pre-Funded Series CCC Warrants to purchase 385,000 shares of common stock (and the shares of common stock issuable upon exercise of the Pre-Funded Series CCC Warrants), in lieu of shares of common stock to the extent that the purchase of common stock would cause the beneficial ownership of the Purchaser, together with its affiliates and certain related parties, to exceed 9.99% of our common stock. The Pre-Funded Series CCC Warrants were sold at an offering price of $2.06 per share for gross proceeds of $793,100, are immediately exercisable for $0.01 per share of common stock and do not have an expiration date. In a concurrent private placement, the Company agreed to issue to each investor, for each share of common stock and pre-funded warrant purchased in the offering, a Series AAA Warrant and Series BBB Warrant, each to purchase one share of common stock. The Series AAA Warrants are initially exercisable six months following issuance and terminate five and one-half years following issuance. The Series AAA Warrants have an exercise price of $2.07 per share and are exercisable to purchase an aggregate of 2,435,000 shares of common stock. The Series BBB Warrants are immediately exercisable following issuance and terminate twelve months following issuance. The Series BBB Warrants have an exercise price of $4.75 per share and are exercisable to purchase an aggregate of 2,435,000 shares of common stock. Subject to limited exceptions, a holder of a Series AAA and Series BBB Warrant will not have the right to exercise any portion of its warrants if the holder, together with its affiliates, would beneficially own in excess of 9.99% of the number of shares of common stock outstanding immediately after giving effect to such exercise. During the fourth quarter of 2017, all 385,000 of the Series CCC Pre-Funded warrants were exercised in full.

On October 4, 2017, the Company entered into letter agreements (the “Exercise Agreements”) with the holders of the Series AAA and Series BBB Warrants issued in the July 6, 2017 Common Stock Offering (the “Exercising Holders”). The Exercise Agreements amended the Series AAA Warrants to permit their immediate exercise. Prior to the execution of the Exercise Agreements, the Series AAA Warrants were not exercisable until January 11, 2018. Pursuant to the Exercise Agreements, the Exercising Holders and the Company agreed that the Exercising Holders would exercise all of their Existing Warrants with respect to 4,665,000 shares of Common Stock underlying such Existing Warrants. The Series AAA Warrants and Series BBB Warrants were exercised at a price of $2.07 per share and $4.75 per share, respectively, which were their respective original exercise prices. The Company received approximately $16.6 million in gross proceeds from the sale of these warrants.

The Exercise Agreements amended the Series AAA Warrants to permit their immediate exercise. Prior to the execution of the Exercise Agreements, the Series AAA Warrants were not exercisable until January 11, 2018. Pursuant to the Exercise Agreements, the Exercising Holders and the Company agreed that the Exercising Holders would exercise all of their Existing Warrants with respect to 4,665,000 shares of Common Stock underlying such Existing Warrants. The Series AAA Warrants and Series BBB Warrants were exercised at a price of $2.07 per share and $4.75 per share, respectively, which were their respective original exercise prices. The Company received approximately $16.6 million in gross proceeds from the sale of these warrants.

The Exercise Agreements also provide for the issuance of 1,166,250 Series DDD Warrants, each to purchase one share of Common Stock (the “Series DDD Warrants”). The Series DDD Warrants have an exercise price $6.20, are exercisable one year following issuance and terminate six months after they are initially exercisable. The Series DDD Warrants and the shares of Common Stock issuable upon the exercise of the Series DDD Warrants were offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act or Rule 506(b) promulgated thereunder. Pursuant to the Exercise Agreements, the Series DDD Warrants shall be substantially in the form of the Existing Warrants and the Company will be required to register for resale the shares of Common Stock underlying the Series DDD Warrants.

February 14, 2017 Public Offering

On February 14, 2017, the Company entered into a securities purchase agreement whereby it sold, in a public offering (the “February 2017 Public Offering”), an aggregate of 1,384,704 shares of common stock of the Company at an offering price of $3.22 per share. In addition, the Company sold Series AA Warrants (the “Series AA Warrants”) to purchase up to 1,177,790 shares of common stock and Pre-Funded Series BB Warrants (the “Pre-Funded Series BB Warrants”) to purchase up to 185,713 shares of common stock. The Series AA Warrants have an exercise price of $3.22 per share, have a five-year life and are immediately exercisable. The Pre-Funded Series BB Warrants were offered at $3.08 per share, were immediately exercisable for $0.14 per share of common stock, do not have an expiration date and were issued in lieu of shares of common stock to the extent that the purchase of common stock would cause the beneficial ownership of the purchaser of such shares, together with its affiliates and certain related parties, to exceed 9.99% of our common stock. The Company received approximately $5.0 million in gross proceeds before the deduction of the placement agent fees and offering expenses (excluding any proceeds from the exercise of the warrants) in the February 2017 Public Offering.

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Concurrently with the exchange agreements associated with the Investor Warrants discussed above on October 26, 2018, the Company and certain holders of the Series AA Warrants entered into Exchange Agreements whereby certain holders of the Series AA Warrants elected to surrender their Series AA Warrants, representing 321,428 shares of Common Stock collectively. In exchange for the surrender of their Series AA Warrants, these holders received 160,414 shares of Common Stock. Collectively the Company incurred broker and legal fees of approximately $0.1 million associated with the Exchange Agreements and recorded these as costs of equity financing and charged against additional paid-in capital.

In connection with the February 2017 Public Offering, the Company filed with the SEC a registration statement on Form S-1 (Registration No. 333-215321) on December 23, 2016, as amended by Pre-Effective Amendment No. 1 filed with the Commission on January 20, 2017, as further amended by Pre-Effective Amendment No. 2 filed with the Commission on February 13, 2017, as further amended by Pre-Effective Amendment No. 3 filed with the Commission on February 13, 2017 and as further amended by Pre-Effective Amendment No. 4 filed with the Commission on February 14, 2017 for the registration of the securities issued and sold under the Securities Act of 1933, as amended.

As of December 31, 2017, all 185,713 of the Series BB Pre-Funded warrants were exercised in full. During 2017, we received approximately $2.4 million from the exercise of Series AA Warrants to purchase 747,254 shares of common stock.

Reduced Exercise Price of Warrants

On February 22, 2013, the Company entered into a securities purchase agreement with certain investors pursuant to which the Company agreed, among other things, to issue warrants (the “2013 Warrants”) to purchase up to 95,811 shares of our common stock at an exercise price of $74.34 per share to such investors in a registered direct offering. On January 15, 2014, the Company entered into a securities purchase agreement with certain investors pursuant to which the Company agreed, among other things, to issue warrants (the “2014 Warrants”) to purchase up to 64,348 shares of our common stock at an exercise price of $57.40 per share to such investors in a registered direct offering. On June 9, 2017, the Company entered into warrant exercise agreements (the “Exercise Agreements”) with certain holders of the 2013 Warrants, the 2014 Warrants and the June 2016 Warrants (the “Exercising Holders”), which Exercising Holders own, in the aggregate, warrants exercisable for 790,410 shares of our common stock. Pursuant to the Exercise Agreements, the Exercising Holders and the Company agreed that the Exercising Holders would exercise their 2013 Warrants, the 2014 Warrants and the June 2016 Warrants with respect to 790,410 shares of our common stock underlying such warrants for a reduced exercise price equal to $2.70 per share. The Company received aggregate gross proceeds of approximately $2.1 million from the exercise of the 2013 Warrants, the 2014 Warrants and the June 2016 Warrants by the Exercising Holders.

The reduced exercise price of the 2013 Warrants, the 2014 Warrants and the June 2016 Series C Warrants increased the fair value of the warrants by approximately $0.2 million. This increase in fair value is recorded as a deemed dividend in additional paid in capital due to the retained deficit and it increased the net loss available to common shareholders on the consolidate statement of operations.

On May 27, 2015, the Company entered into a securities purchase agreement with certain investors pursuant to which the Company agreed, among other things, to issue warrants (the "2015 Warrants") to purchase up to 139,284 shares of the Company's common stock at an exercise price of $36.40 per share, to such investors in a registered direct offering. Between June 22, 2017 through June 26, 2017, the Company and holders of the 2015 Warrants and the December 2016 Warrants (the "Exercising Investors") entered into agreements whereby the Company agreed that the Exercising investors would exercise their 2015 Warrants and the June 2016 Warrants with respect to 506,627 shares of our common stock underlying such warrants for a reduced exercise price equal to $1.65 per share. The Company received aggregate gross proceeds of approximately $0.8 million from the exercise of the 2015 Warrants and the June 2016 Warrants by the Exercising Investors.

The reduced exercise price of the 2015 Warrants increased the fair value of the warrants by approximately $0.1 million. This increase in fair value is recorded as a deemed dividend in additional paid in capital due to the retained deficit and it increased the net loss available to common shareholders on the consolidate statement of operations.

Aspire Purchase Agreement

On August 31, 2018, we entered into a common stock purchase agreement (the "Aspire Purchase Agreement") with Aspire Capital Fund, LLC ("Aspire Capital") which provides that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital is committed to purchase up to an aggregate of $15.0 million of shares of the Company's common stock over the 24-month term of the Aspire Purchase Agreement. On October 12, 2018, the Company filed with the SEC a prospectus supplement to the 2018 Shelf Registration Statement registering all of the shares of common stock that may be offered to Aspire Capital from time to time.

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Under the Aspire Purchase Agreement, on any trading day selected by the Company, the Company has the right, in its sole discretion, to present Aspire Capital with a purchase notice (each, a “Purchase Notice”), directing Aspire Capital (as principal) to purchase up to 100,000 shares of the Company’s common stock per business day, up to $15.0 million of the Company’s common stock in the aggregate at a per share price (the “Purchase Price”) equal to the lesser of:

- the lowest sale price of the Company’s common stock on the purchase date; or
- the arithmetic average of the three (3) lowest closing sale prices for the Company’s common stock during the ten (10) consecutive trading days ending on the trading day immediately preceding the purchase date.

The Company and Aspire Capital also may mutually agree to increase the number of shares that may be sold to as much as an additional 2,000,000 shares per business day.

In addition, on any date on which the Company submits a Purchase Notice to Aspire Capital in an amount equal to at least 100,000 shares, the Company also has the right, in its sole discretion, to present Aspire Capital with a volume-weighted average price purchase notice (each, a “VWAP Purchase Notice”) directing Aspire Capital to purchase an amount of stock equal to up to 30% of the aggregate shares of the Company’s common stock traded on its principal market on the next trading day (the “VWAP Purchase Date”), subject to a maximum number of shares the Company may determine. The purchase price per share pursuant to such VWAP Purchase Notice is generally 97% of the volume-weighted average price for the Company’s common stock traded on its principal market on the VWAP Purchase Date.

The Purchase Price will be adjusted for any reorganization, recapitalization, non-cash dividend, stock split, or other similar transaction occurring during the period(s) used to compute the Purchase Price. The Company may deliver multiple Purchase Notices and VWAP Purchase Notices to Aspire Capital from time to time during the term of the Purchase Agreement, so long as the most recent purchase has been completed.

There are no trading volume requirements or restrictions under the Purchase Agreement, and the Company will control the timing and amount of sales of the Company’s common stock to Aspire Capital. Aspire Capital has no right to require any sales by the Company but is obligated to make purchases from the Company as directed by the Company in accordance with the Purchase Agreement. There are no limitations on use of proceeds, financial or business covenants, restrictions on future funding, rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. In consideration for entering into the Purchase Agreement, concurrently with the execution of the Purchase Agreement, the Company issued to Aspire Capital 164,835 shares of the Company’s common stock (the “Commitment Shares”). The Company’s policy is to record specific incremental costs directly attributable to an offering as a charge against the gross proceeds, if any, when the offering becomes effective. These Commitment Shares valued at $450,000 were recorded in September 2018 as costs of equity financing and charged against additional paid-in capital. The Aspire Purchase Agreement may be terminated by the Company at any time, at its discretion, without any cost to the Company. Aspire Capital has agreed that neither it nor any of its agents, representatives and affiliates shall engage in any direct or indirect short-selling or hedging of the Company's common stock during any time prior to the termination of the Purchase Agreement. Any proceeds from the Company receives under the Aspire Purchase Agreement are expected to be used for working capital and general corporate purposes. During 2018 and as of December 31, 2018, the Company sold and issued an aggregate of 100,000 shares under the Purchase Agreement, receiving approximately $0.2 million. During 2019 and as of March 28, 2019, the Company sold and issued an aggregate of 600,000 shares under the Purchase Agreement, receiving approximately $1.3 million.

Capital on Demand™ Sales Agreement

On December 4, 2018, the Company entered into a Capital on Demand™ Sales Agreement (the "Capital on Demand Agreement") with JonesTrading Institutional Services LLC, as sales agent ("JonesTrading"), pursuant to which the Company may offer and sell, from time to time, through JonesTrading shares of Common Stock having an aggregate offering price of up to $16.0 million. The Company intends to use the net proceeds from the offering, if any, for general corporate purposes, including research and development activities, capital expenditures and working capital.

The Company is not obligated to sell any Common Stock under the Capital on Demand Agreement and, subject to the terms and conditions of the Capital on Demand Agreement, JonesTrading will use commercially reasonable efforts, consistent with its normal trading and sales practices and applicable state and federal law, rules and regulations and the rules of The NASDAQ Capital Market, to sell Common Stock from time to time based upon Celsion's instructions, including any price, time or size limits or other customary parameters or conditions the Company may impose. Under the Capital on Demand Agreement, JonesTrading may sell Common Stock by any method deemed to be an "at the market offering" as defined in Rule 415 promulgated under the Securities Act of 1933, as amended.

The Capital on Demand Agreement will terminate upon the earlier of (i) the sale of all shares of our common stock subject to the Sales Agreement, and (ii) the termination of the Capital on Demand Agreement by JonesTrading or Celsion. The Capital on Demand Agreement may be terminated by JonesTrading or the Company at any time upon 10 days' notice to the other party, or by JonesTrading at any time in certain circumstances, including the occurrence of a material adverse change in the Company.

The Company will pay JonesTrading a commission of 3.0% of the aggregate gross proceeds from each sale of Common Stock and has agreed to provide JonesTrading with customary indemnification and contribution rights.

The Shares will be issued pursuant to Celsion's previously filed and effective Registration Statement on Form S-3 (File No. 333-227236), the base prospectus dated October 12, 2018, filed as part of such Registration Statement, and the prospectus supplement dated December 4, 2018, filed by Celsion with the Securities and Exchange Commission. The Company did not sell any shares under the Capital on Demand Agreement as of December 31, 2018. During 2019 and as of March 28, 2019, the Company sold and issued an aggregate of 122,186 shares under the Capital on Demand Agreement, receiving approximately $0.3 million.

Controlled Equity Offering

On February 1, 2013, the Company entered into a Controlled Equity Offering SM Sales Agreement (the "ATM Agreement") with Cantor Fitzgerald & Co., as sales agent ("Cantor"), pursuant to which Celsion could offer and sell, from time to time, through Cantor, shares of our common stock having an aggregate offering price of up to $25.0 million (the "ATM Shares") pursuant to the 2015 Shelf Registration Statement. Under the ATM Agreement, Cantor may sell ATM Shares by any method deemed to be an "at-the-market" offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, including sales made directly on The NASDAQ Capital Market, on any other existing trading market for our common stock or to or through a market maker. On October 10, 2018, the Company delivered notice to Cantor terminating the ATM effective as of October 20, 2018. The Company has no further obligations under the Sales Agreement. During 2018, the Company received approximately $1.2 million in proceeds from the sale of 457,070 shares of common stock under the ATM Agreement and during 2017, it received approximately $3.9 million in proceeds from the sale of 1,221,348 shares of common stock under the ATM Agreement. From February 1, 2013 through September 30, 2018, the Company sold and issued an aggregate of 1,784,396 shares of common stock under the ATM Agreement, receiving approximately $12.8 million in gross proceeds.

11. STOCK-BASED COMPENSATION

The Company has long-term compensation plans that permit the granting of equity based-awards in the form of stock options, restricted stock, restricted stock units, stock appreciation rights, other stock awards, and performance awards.

At the 2018 Annual Stockholders Meeting of the Company held on May 15, 2018, stockholders approved the Celsion Corporation 2018 Stock Incentive Plan (the "2018 Plan"). The 2018 Plan, as adopted, permits the granting of 2,700,000 shares of Celsion common stock as equity awards in the form of incentive stock options, nonqualified stock options, restricted stock, restricted stock units, stock appreciation rights, other stock awards, performance awards, or in any combination of the foregoing. Prior to the adoption of the 2018 Plan, the Company had maintained the Celsion Corporation 2007 Stock Incentive Plan (the 2007 Plan). The 2007 Plan permitted the granting of 688,531 shares of Celsion common stock as equity awards in the form of incentive stock options, nonqualified stock options, restricted stock, restricted stock units, stock appreciation rights, phantom stock, performance awards, or in any combination of the foregoing. The 2018 Plan replaced the 2007 Plan although the 2007 Plan remains in effect for awards previously granted under the 2007 Plan. Under the terms of the 2018 Plan, any shares subject to an award under the 2007 Plan which are not delivered because of the expiration, forfeiture, termination or cash settlement of the award will become available for grant under the 2018 Plan.

The Company has issued stock awards to employees and directors in the form of stock options and restricted stock. Options are generally granted with strike prices equal to the fair market value of a share of Celsion common stock on the date of grant. Incentive stock options may be granted to purchase shares of common stock at a price not less than 100% of the fair market value of the underlying shares on the date of grant, provided that the exercise price of any incentive stock option granted to an eligible employee owning more than 10% of the outstanding stock of Celsion must be at least 110% of such fair market value on the date of grant. Only officers and key employees may receive incentive stock options.

Option and restricted stock awards vest upon terms determined by the Compensation Committee of the Board of Directors and are subject to accelerated vesting in the event of a change of control or certain terminations of employment. The Company issues new shares to satisfy its obligations from the exercise of options or the grant of restricted stock awards.

On September 28, 2018, the Compensation Committee of the Board of Directors approved the grant of (i) inducement stock options (the “Inducement Option Grants”) to purchase a total of 164,004 shares of Celsion common stock and (ii) inducement restricted stock awards (the “Inducement Stock Grants”) totaling 19,000 shares of Celsion common stock to three new employees. All awards have a grant date of September 28, 2018. Each of Inducement Option Grant has an exercise price per share equal to $2.77, the closing price of Celsion’s common stock as reported by Nasdaq on September 28, 2018. Each Inducement Option Grant will vest over three years, with one-third vesting on the one-year anniversary of the employee’s first day of employment with the Company and one-third vesting on the second and third anniversaries thereafter, subject to the new employee’s continued service relationship with the Company on each such date. Each Inducement Option Grant has a ten-year term and is subject to the terms and conditions of the applicable stock option agreement. Each of Inducement Stock Grant will vest on the one-year anniversary of the employee’s first day of employment with the Company and are subject to the new employee’s continued service relationship with the Company through such date and is subject to the terms and conditions of the applicable restricted stock agreement.

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As of December 31, 2018, there were a total of 3,399,893 shares of Celsion common stock reserved for issuance under the 2018 Plan, which were comprised of 3,064,741 shares of Celsion common stock subject to equity awards previously granted under the 2018 Plan and 2007 Plan and 335,152 shares of Celsion common stock available for future issuance under the 2018 Plan. As of December 31, 2018, there were a total of 106,502 of Celsion common stock subject to outstanding inducement awards.

Total compensation cost charged related to stock options and restricted stock awards amounted to $4.6 million and $1.1 million during 2018 and 2017, respectively as was recognized in operating expenses. As of December 31, 2018, there was $1.8 million of total unrecognized compensation cost related to non-vested stock-based compensation arrangements. That cost is expected to be recognized over a weighted-average period of 0.9 years. The weighted average grant date fair values of the stock options granted during 2018 and 2017 was $2.36 and 2.32, respectively.

A summary of stock option awards as of December 31, 2018 and changes during the two-year period ended December 31, 2018 is presented below:

Stock Options	Number Outstanding	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at January 1, 2017	211,213	$ 61.59		
Granted	535,964	$ 2.69		
Canceled or expired	(43,735)	$ 164.12		
Outstanding at December 31, 2017	703,442	$ 10.34		
Granted	2,629,004	$ 2.26		
Canceled or expired	(183,703)	$ 25.96		
Outstanding at December 31, 2018	3,148,743	$ 2.67	9.2	$ -
Exercisable at December 31, 2018	1,689,902	$ 2.97	9.1	$ -

A summary of the status of the Company's non-vested restricted stock awards as of December 31, 2018 and changes during the two year period ended December 31, 2018, is presented below:

Restricted Stock	**Number Outstanding**	**Weighted Average**

		Grant Date Fair Value
Non-vested stock awards outstanding at January 1, 2017	4,785	$ 37.42
Granted	(3,357)	$ 42.20
Vested and issued	(1,428)	$ 26.18
Non-vested stock awards outstanding at December 31, 2017	-	$ -
Granted	35,000	$ 2.71
Vested and issued	(6,000)	$ 2.77
Forfeited	(6,500)	$ 2.64
Non-vested stock awards outstanding at December 31, 2018	22,500	$ 2.72

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A summary of stock options outstanding at December 31, 2018 by price range is as follows:

	Options Outstanding			Options Exercisable		
Range of Exercise Prices	**Number**	**Weighted Average Remaining Contractual Term (in years)**	**Weighted Average Exercise Price**	**Number**	**Weighted Average Remaining Contractual Term (in years)**	**Weighted Average Exercise Price**
Up to $5.00	3,084,252	9.2	$2.34	1,625,807	9.2	$2.34
Above $5.00 to $81.90	64,491	7.0	$19.00	64,095	7.0	$19.00
	3,148,743			1,689,902		

The fair values of stock options granted were estimated at the date of grant using the Black-Scholes option pricing model. The Black-Scholes model was originally developed for use in estimating the fair value of traded options, which have different characteristics from Celsion's stock options. The model is also sensitive to changes in assumptions, which can materially affect the fair value estimate. The Company used the following assumptions for determining the fair value of options granted under the Black-Scholes option pricing model:

	Year Ended December 31,	
	2018	2017
Risk-free interest rate	2.82 to 3.02 %	2.21 to 2.32 %
Expected volatility	99.9 - 102.12 %	90.4 - 100.8 %
Expected life (in years)	8.5 to 10	10
Expected dividend yield	0.0 %	0.0 %

Expected volatilities utilized in the model are based on historical volatility of the Company's stock price. Starting in 2017, the Company made the election to account for forfeitures when they occur.

12. EARN-OUT MILESTONE LIABILITY

The total aggregate purchase price for the EGEN Acquisition included potential future Earn-out Payments contingent upon achievement of certain milestones. The difference between the aggregate $30.4 million in future Earn-out Payments and the $13.9 million included in the fair value of the acquisition consideration at June 20, 2014 was based on the Company's risk-adjusted assessment of each milestone (10% to 67%) and utilizing a discount rate based on the estimated time to achieve the milestone (1.5 to 2.5 years). The earn-out milestone liability will be fair valued at the end of each quarter and any change in their value will be recognized in the financial statements.

At December 31, 2018, the Company fair valued the earn-out milestone liability at $8.9 million and recognized a non-cash gain of $3.6 million during 2018 as a result of the change in the fair value of earn-out milestone liability of $12.5 million at December 31, 2017. Included in the non-cash gain during 2018, was the reduction of the liability by $3.9 million during the third quarter of 2017 related to the write down of one of the in-process research and development assets (see Note 5) as the Company believes there is a de minimis probability of the payout of the related earn-out milestone liabilities. The fair value of the remaining earn-out milestone liabilities at December 31, 2018 was based on the Company's risk-adjusted assessment of each milestone (80%) utilizing a discount rate based on the estimated time to achieve the milestone (1.25 years).

At December 31, 2017, the Company fair valued the earn-out milestone liability at $12.5 million and recognized a non-cash gain of $0.6 million during 2017 as a result of the change in the fair value of earn-out milestone liability of $13.2 million at December 31, 2016. The non-cash gain during 2017 resulted from the reduction of the liability by $1.4 million during the third quarter of 2017 related to the partial write down of one of the in-process research and development assets (see Note 5) as the Company believes there is a reduced probability of the payout of the related earn-out milestone liabilities. The fair value of the remaining earn-out milestone liabilities at December 31, 2017 was based on the Company's risk-adjusted assessment of each milestone (50% to 80%) utilizing a discount rate based on the estimated time to achieve the milestone (1.3 to 1.5 years).

The following is a summary of the changes in the earn-out milestone liability for 2017 and 2018:

Balance at January 1, 2017	$13,188,226
Non-cash gain from the adjustment for the change in fair value included in 2017 net loss	(649,701)
Balance at December 31, 2017	12,538,525
Non-cash gain from the adjustment for the change in fair value included in 2018 net loss	(3,630,861)
Balance at December 31, 2018	$8,907,664

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13. WARRANTS

As more fully described in Notes 8 and 10, the Company completed a series of equity and debt financing transactions in 2018 and 2017 that included the issuance of warrants to purchase 190,114 and 9,231,628 shares, respectively, of the Company's common stock. During 2018, the Company and certain investors holding warrants to collectively purchase 1.6 million shares of the Company's common stock, which were received in the February 2017 Public Offering and the October 2017 Underwritten Offering, entered into warrant exchange agreements whereby the Company issued 820,714 shares of its common stock in exchange for the cancellation of the warrants. Investors exercised warrants to purchase 7,617,148 shares of common stock providing $22.0 million in gross proceeds to the Company during 2017. Warrants to purchase 13,927 and 44,037 shares of common stock expired during 2018 and 2017, respectively. After the warrant exchange, warrants outstanding totaled approximately 1.6 million with a weighted average exercise price of $5.75 per share as of December 31, 2018. Approximately 1.2 million of these outstanding warrants with a strike price of $6.20 per share will expire on April 4, 2019.

Following is a summary of all warrant activity for the two years ended December 31, 2018:

Warrants	**Number of Warrants Issued**	**Weighted Average Exercise Price**
Warrants outstanding at January 1, 2017	1,487,958	$ 9.39
Warrants issued in connection with 2017 equity transactions	9,231,628	$ 3.46
Warrants exercised during 2017	(7,617,147)	$ 2.89
Warrants expired during 2017	(44,037)	$ 209.23
Warrants outstanding at December 31, 2017	3,058,402	$ 5.29
Warrants issued in connection with 2018 debt transaction	190,114	$ 2.63
Warrants cancelled in exchange for common stock	(1,641,427)	$ 3.04
Warrants expired during 2018	(13,927)	$ 226.24
Warrants outstanding and exercisable at December 31, 2018	1,593,162	$ 5.36
Aggregate intrinsic value of outstanding warrants at December 31, 2018	$-	
Weighted average remaining contractual terms (years)	1.87	

14. CELSION EMPLOYEE BENEFIT PLANS

Celsion maintains a defined-contribution plan under Section 401(k) of the Internal Revenue Code. The plan covers substantially all employees over the age of 21. Participating employees may defer a portion of their pretax earnings, up to the IRS annual contribution limit. The Company makes a matching contribution up to a maximum of 3% of an employee’s annual salary. The Company’s total matching contributions for the years ended December 31, 2018 and 2017 was $93,948 and $77,352 respectively. During 2018 and 2017, the Company also provided a discretionary contribution totaling $181,999 and $172,497, respectively, which represented 6% of each eligible participant’s annual salary in each of 2018 and 2017. These amounts were paid in January in each of the subsequent years.

15. LICENSES OF INTELLECTUAL PROPERTY AND PATENTS

On November 10, 1999, the Company entered into a license agreement with Duke University (“Duke”) under which the Company received worldwide exclusive rights (subject to certain exceptions) to commercialize and use Duke’s thermally sensitive liposome technology. The license agreement contains annual royalty and minimum payment provisions due on net sales. The agreement also required milestone-based royalty payments measured by various events, including product development stages, FDA applications and approvals, foreign marketing approvals and achievement of significant sales. However, in lieu of such milestone-based cash payments, Duke agreed to accept shares of the Company’s common stock to be issued in installments at the time each milestone payment is due, with each installment of shares to be calculated at the average closing price of the common stock during the 20 trading days prior to issuance.

The total number of shares issuable to Duke under these provisions is subject to adjustment in certain cases, and Duke has piggyback registration rights for public offerings taking place more than one year after the effective date of the license agreement. On January 31, 2003, the Company issued 253,691 shares of common stock to Duke University valued at $2.2 million as payment for milestone-based royalties under this license agreement. An amendment to the Duke license agreement contains certain development and regulatory milestones, and other performance requirements that the Company has met with respect to the use of the licensed technologies. The Company will be obligated to make royalty payments based on sales to Duke upon commercialization, until the last of the Duke patents expire. For the years ended December 31, 2018 and 2017, the Company has not incurred any expense under this agreement and will not incur any future liabilities until commercial sales commence.

Under the November 1999 license agreement with Duke, the Company has rights to the thermally sensitive liposome technology, including Duke's U.S. patents covering the technology as well as all foreign counter parts and related pending applications. Foreign counterpart applications have been issued in the EU, Hong Kong, Australia and Canada and have been allowed in Japan. The EU patent has been validated in Austria, Belgium, France, Germany, Great Britain, Italy, Luxembourg, Monaco, Spain and Switzerland. In addition, the Duke license agreement provides the Company with rights to multiple issued and pending U.S. patents related to the formulation, method of making and use of heat sensitive liposomes. The Company's rights under the license agreement with Duke extend for the life of the last-to-expire of the licensed patents.

The Company has licensed from Valentis, CA certain global rights covering the use of pegylation for temperature sensitive liposomes.

In addition to the rights available to the Company under completed or pending license agreements, the Company is actively pursuing patent protection for technologies developed by the Company. Among these patents is a family of pending US and international patent applications which seek to protect the Company's proprietary method of storing ThermoDox® which is critical for worldwide distribution channels.

ThermoDox® is a registered trademark in the U.S., Argentina, Australia, Canada, China, Columbia, the EU Member States: (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Korea, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom), Hong Kong, Israel, Japan, New Zealand, Peru, Philippines, Russia, Singapore, South Korea and Taiwan. The Company has registered transliterations of ThermoDox® in China, Hong Kong, Japan, Singapore, South Korea and Taiwan. The Company has an additional 14 trademark protection applications pending for ThermoDox® in countries world-wide.

Finally, through proprietary information agreements with employees, consultants and others, the Company seeks to protect its own proprietary know-how and trade secrets. The Company cannot offer assurances that these confidentiality agreements will not be breached, that the Company will have adequate remedies for any breach, or that these agreements, even if fully enforced, will be adequate to prevent third-party use of the Company's proprietary technology. Similarly, the Company cannot guarantee that technology rights licensed to it by others will not be successfully challenged or circumvented by third parties, or that the rights granted will provide the Company with adequate protection.

16. TECHNOLOGY DEVELOPMENT AND LICENSING AGREEMENTS

On May 7, 2012, the Company entered into a long-term commercial supply agreement with Zhejiang Hisun Pharmaceutical Co. Ltd. (Hisun) for the production of ThermoDox® in the China territory. In accordance with the terms of the agreement, Hisun will be responsible for providing all of the technical and regulatory support services, including the costs of all technical transfer, registration and bioequivalence studies, technical transfer costs, Celsion consultative support costs and the purchase of any necessary equipment and additional facility costs necessary to support capacity requirements for the manufacture of ThermoDox®. Celsion will repay Hisun for the aggregate amount of these development costs and fees commencing on the successful completion of three registration batches of ThermoDox®. Hisun is also obligated to certain performance requirements under the agreement. The agreement will initially be limited to a percentage of the production requirements of ThermoDox® in the China territory with Hisun retaining an option for additional global supply after local regulatory approval in the China territory. In addition, Hisun will collaborate with Celsion around the regulatory approval activities for ThermoDox® with the China State Food and Drug Administration (CHINA FDA). During the first quarter of 2015, Hisun completed the successful manufacture of three registration batches of ThermoDox®.

On January 18, 2013, we entered into a technology development contract with Hisun, pursuant to which Hisun paid us a non-refundable research and development fee of $5 million to support our development of ThermoDox ® in mainland China, Hong Kong and Macau (the China territory). Following our announcement on January 31, 2013 that the HEAT study failed to meet its primary endpoint, Celsion and Hisun have agreed that the Technology Development Contract entered into on January 18, 2013 will remain in effect while the parties continue to collaborate and are evaluating the next steps in relation to ThermoDox ® , which include the sub-group analysis of patients in the Phase III HEAT Study for the hepatocellular carcinoma clinical indication and other activities to further the development of ThermoDox ® for the Greater China market. The $5.0 million received as a non-refundable payment from Hisun in the first quarter 2013 has been recorded to deferred revenue and will continue to be amortized over the 10 -year term of the agreement, until such time as the parties find a mutually acceptable path forward on the development of ThermoDox ® based on findings of the ongoing post-study analysis of the HEAT Study data.

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On July 19, 2013, the Company and Hisun entered into a Memorandum of Understanding to pursue ongoing cooperation for the continued clinical development of ThermoDox® as well as the technology transfer relating to the commercial manufacture of ThermoDox® for the China territory. This expanded level of cooperation includes development of the next generation liposomal formulation with the goal of creating safer, more efficacious versions of marketed cancer chemotherapeutics.

Among the key provisions of the Celsion-Hisun Memorandum of Understanding are:

Hisun will provide the Company with internal resources necessary to complete the technology transfer of the Company's proprietary manufacturing process and the production of registration batches for the China territory;

Hisun will coordinate with the Company around the clinical and regulatory approval activities for ThermoDox® as well as other liposomal formations with the CHINA FDA; and

Hisun will be granted a right of *first* offer for a commercial license to ThermoDox® for the sale and distribution of ThermoDox® in the China territory.

On August 8, 2016, we signed a Technology Transfer, Manufacturing and Commercial Supply Agreement ("GEN-1 Agreement") with Hisun to pursue an expanded partnership for the technology transfer relating to the clinical and commercial manufacture and supply of GEN- 1, Celsion's proprietary gene mediated, IL- 12 immunotherapy, for the greater China territory, with the option to expand into other countries in the rest of the world after all necessary regulatory approvals are in effect. The GEN- 1 Agreement will help to support supply for both ongoing and planned clinical studies in the U.S., and for potential future studies of GEN- 1 in China. GEN- 1 is currently being evaluated by Celsion in first line ovarian cancer patients.

Key provisions of the GEN-1 Agreement are as follows:

the GEN-1 Agreement has targeted unit costs for clinical supplies of GEN-*1* that are substantially competitive with the Company's current suppliers;

once approved, the cost structure for GEN-*1* will support rapid market adoption and significant gross margins across global markets;

Celsion will provide Hisun a certain percentage of China's commercial unit demand, and separately of global commercial unit demand, subject to regulatory approval;

Hisun and Celsion will commence technology transfer activities relating to the manufacture of GEN-*1,* including all studies required by CFDA for site approval; and

Hisun will collaborate with Celsion around the regulatory approval activities for GEN-*1* with the CFDA. A local China partner affords Celsion access to accelerated CFDA review and potential regulatory exclusivity for the approved indication.

The Company evaluated the Hisun arrangement in accordance with ASC 606 and determined that its performance obligations under the agreement include the non-exclusive, royalty-free license, research and development services to be provided by the Company, and its obligation to serve on a joint committee. The Company concluded that the license was not distinct since its value is closely tied to the ongoing research and development activities. As such, the license and the research and development services are be bundled as a single performance obligation. Since the provision of the license and research and development services are considered a single performance obligation, the $5,000,000 upfront payment is being recognized as revenue ratably through 2022.

17. COMMITMENTS

In July 2011, the Company executed a lease (the "Lease") with Brandywine Operating Partnership, L.P. (Brandywine), a Delaware limited partnership for a 10,870 square foot premises located in Lawrenceville, New Jersey. In October 2011, the Company relocated its offices to Lawrenceville, New Jersey from Columbia, Maryland. The lease has a term of 66 months and provides for 6 months of rent free, with the first monthly rent payment of approximately $23,000 due and paid in April 2012. Also, as required by the Lease, the Company provided Brandywine with an irrevocable and unconditional standby letter of credit for $250,000, which the Company secured with an escrow deposit at its banking institution of this same amount. The standby letter of credit was reduced by $50,000 on each of the 19th, 31st and 43rd months from the initial term, and the remaining $100,000 amount was reduced when the Lease term expired in April 2017. In late 2015, Lenox Drive Office Park LLC, purchased the real estate and office building and assumed the lease. This lease was set to expire on April 30, 2017. In April 2017, the Company and the landlord amended the Lease effective May 1, 2017. The Lease amendment extended the term of the agreement for an additional 64 months, reduced the premises to 7,565 square feet, reduced the monthly rent and provided four months free rent. On February 1, 2019, we amended the current terms of the lease to increase the size of the premises by 2,285 square feet to 9,850 square feet and also extended the lease term by one year to September 1, 2023. In conjunction with the February 1, 2019 lease amendment, we agreed to modify our one-time option to cancel the lease as of the 36th month after the May 1, 2017 lease commencement date. The monthly rent will range from approximately $18,900 in the first year to approximately $20,500 in the final year of the amendment. The Company also has a one-time option to cancel the lease as of the 24th month after the commencement date of the Lease amendment.

In connection with the EGEN Asset Purchase Agreement in June 2014, the Company assumed the existing lease with another landlord for an 11,500 square foot premises located in Huntsville Alabama. This lease has a remaining term of one month with rent a payment of approximately $23,200 per month. In January 2018, the Company and this landlord entered into a new 60 -month lease which reduced the premises to 9,049 square feet with rent payments of approximately $18,100 per month.

The Company paid $457,321 and $502,716 in connection with these leases in 2018 and 2017, respectively. Following is a summary of the future minimum payments required under leases that have initial or remaining lease terms of one year or more as of December 31, 2018:

For the year ending December 31:	**Operating Leases**
2019	$450,430
2020	454,213
2021	457,995
2022	379,823
	18,098
Total minimum lease payments	$1,760,559

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18. SUBSEQUENT EVENTS

On March 28, 2019, the Company and EGWU, Inc, entered into an amendment to the Asset Purchase Agreement discussed in Note 5 (the “Amended Asset Purchase Agreement”). Pursuant to the Amended Asset Purchase Agreement, payment of the earnout milestone liability related to the Ovarian Cancer Indication of $12.4 million has been modified. The Company has the option to make the payment as follows:

a) $7.0 million in cash within 10 business days of achieving the milestone; or

b) $12.4 million in cash, common stock of the Company, or a combination of either, within one year of achieving the milestone.

The Company will provide EGWU, Inc. 200,000 warrants to purchase common stock at a strike price of $0.01 per warrant share as consideration for entering into this agreement. The Company will record this transaction in the first quarter of 2019.

Explanation of Responses: