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

FORM 10-Q

(Mark One)

[X] QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended June 30, 2018

OR

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

For the transition period from _____ to _____

Commission file number: 001-15911

CELSION CORPORATION
(Exact name of Registrant as specified in its charter)

Delaware	**52-1256615**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

997 Lenox Drive, Suite 100,
Lawrenceville, **NJ 08648**
(Address of principal executive offices)

(609) 896-9100
(Registrant's telephone number, including area code)

NA

(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 [X] No [ ]

Indicate by check mark whether the Registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files).
Yes [X] 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 (Check One):

Large accelerated filer [ ] Accelerated filer [ ]

Non-accelerated filer [ ] (Do not check if a smaller reporting company) Smaller reporting company [X]

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 [X]

As of August 13, 2018, the Registrant had 17,746,285 shares of common stock, $0.01 par value per share, outstanding.

CELSION CORPORATION
QUARTERLY REPORT ON
FORM 10-Q

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Forward-Looking Statements

This report includes “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. All statements other than statements of historical fact are “forward-looking statements” for purposes of this Quarterly Report on Form 10-Q, including, without limitation, any projections of earnings, revenue or other financial items, any statements of the plans and objectives of management for future operations (including, but not limited to, pre-clinical development, clinical trials, manufacturing and commercialization), any statements concerning proposed drug candidates potential therapeutic benefits, or other new products or services, any statements regarding future economic conditions or performance, any changes in the course of research and development activities and in clinical trials, any possible changes in cost and timing of development and testing, capital structure, financial condition, working capital needs and other financial items, any changes in approaches to medical treatment, any introduction of new products by others, any possible licenses or acquisitions of other technologies, assets or businesses, our ability to realize the full extent of the anticipated benefits of our acquisition of the assets of EGEN, Inc., including achieving operational cost savings and synergies in light of any delays we may encounter in the integration process and additional unforeseen expenses, any possible actions by customers, suppliers, partners, competitors and regulatory authorities, compliance with listing standards of The NASDAQ Capital Market and any statements of assumptions underlying any of the foregoing. In some cases, forward-looking statements can be identified by the use of terminology such as “may,” “will,” “expects,” “plans,” “anticipates,” “estimates,” “potential” or “continue,” or the negative thereof or other comparable terminology. Although we believe that our expectations are based on reasonable assumptions within the bounds of our knowledge of our industry, business and operations, we cannot guarantee that actual results will not differ materially from our expectations.

Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including, but not limited to, the risk factors set forth in Part II, Item 1A “Risk Factors” below and for the reasons described elsewhere in this Quarterly Report on Form 10-Q. All forward-looking statements and reasons why results may differ included in this report are made as of the date hereof and we do not intend to update any forward-looking statements, except as required by law or applicable regulations. The discussion of risks and uncertainties set forth in this Quarterly Report on Form 10-Q is not necessarily a complete or exhaustive list of all risks facing us at any particular point in time. We operate in a highly competitive, highly regulated and rapidly changing environment and our business is in a state of evolution. Therefore, it is likely that new risks will emerge, and that the nature and elements of existing risks will change, over time. It is not possible for management to predict all such risk factors or changes therein, or to assess either the impact of all such risk factors on our business or the extent to which any individual risk factor, combination of factors, or new or altered factors, may cause results to differ materially from those contained in any forward-looking statement.

Except where the context otherwise requires, in this Quarterly Report on Form 10-Q, the “Company,” “Celsion,” “we,” “us,” and “our” refer to Celsion Corporation, a Delaware corporation and its wholly-owned subsidiary CLSN Laboratories, Inc., also a Delaware corporation.

Trademarks

The Celsion brand and product names, including but not limited to Celsion® and ThermoDox® contained in this document are trademarks, registered trademarks or service marks of Celsion Corporation or its subsidiary in the United States (U.S.) and certain other countries. This document also contains references to trademarks and service marks of other companies that are the property of their respective owners.

PART I: FINANCIAL INFORMATION

Item 1. FINANCIAL STATEMENTS

CELSION CORPORATION

CONDENSED CONSOLIDATED BALANCE SHEETS

	June 30, 2018 (unaudited)	December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 12,753,694	$ 11,444,055
Investment securities – available for sale, at fair value	13,442,107	12,724,020
Accrued interest receivable on investment securities	56,832	54,440
Advances, deposits and other current assets	89,186	89,186
Subtotal current assets	26,341,819	24,311,701
Property and equipment (at cost, less accumulated depreciation and amortization of $2,899,400 and $2,838,716, respectively)	192,785	175,771
Other assets:		
In-process research and development	20,246,491	20,246,491
Other intangible assets, net	681,950	795,608
Goodwill	1,976,101	1,976,101
Patent licensing fees, deposits and other assets, net	70,761	8,761
Subtotal other assets	22,975,303	23,026,961
Total assets	$ 49,509,907	$ 47,514,433

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED BALANCE SHEETS (Continued)

	June 30, 2018 (unaudited)	December 31, 2017
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable ─ trade	$ 3,703,073	$ 3,416,863
Other accrued liabilities	2,032,393	2,282,827
Deferred revenue – current portion	500,000	500,000
Subtotal current liabilities	6,235,466	6,199,690
Earn-out milestone liability	13,085,849	12,538,525
Notes payable – non-current portion	9,222,121	-
Deferred revenue – non-current portion	1,750,000	2,000,000
Other liabilities – non-current portion	68,755	71,710
Total liabilities	30,362,191	20,809,925
Commitments and contingencies	-	-
Stockholders' equity:		
Preferred Stock - $0.01 par value (100,000 shares authorized; no shares issued or outstanding at June 30, 2018 and December 31, 2017)	-	-
Common stock - $0.01 par value (112,500,000 shares authorized; 17,746,619 and 17,277,299 shares issued at June 30, 2018 and December 31, 2017, respectively, and 17,746,285 and 17,276,965 shares outstanding at June 30, 2018 and December 31, 2017, respectively)	177,466	172,772
Additional paid-in capital	293,549,124	288,408,976
Accumulated other comprehensive loss	(4,247)	(10,164)
Accumulated deficit	(274,489,439)	(261,781,888)
Subtotal	19,232,904	26,789,696
Treasury stock, at cost (334 shares at June 30, 2018 and December 31, 2017)	(85,188)	(85,188)
Total stockholders' equity	19,147,716	26,704,508
Total liabilities and stockholders' equity	$ 49,509,907	$ 47,514,433

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	**2017**	**2018**	**2017**
Licensing revenue	$ 125,000	$ 125,000	$ 250,000	$ 250,000
Operating expenses:				
Research and development	4,593,544	3,046,631	7,334,620	6,521,907
General and administrative	3,542,809	1,649,110	5,207,837	3,117,232
Total operating expenses	8,136,353	4,695,741	12,542,457	9,639,139
Loss from operations	(8,011,353)	(4,570,741)	(12,292,457)	(9,389,139)
Other (expense) income:				
Loss from change in valuation of earn-out milestone liability	(277,129)	(292,228)	(547,324)	(575,979)
Investment income	73,461	1,426	147,185	3,417
Interest expense	(15,031)	(29,416)	(15,031)	(91,756)
Other (expense) income	(504)	1,090	76	3,452
Total other (expense) income, net	(219,203)	(319,128)	(415,094)	(660,866)
Net loss	(8,230,556)	(4,889,869)	(12,707,551)	(10,050,005)
Deemed dividend related to warrant modification	-	(345,685)	-	(345,685)
Net loss attributable to common shareholders	$ (8,230,556)	$ (5,235,554)	$ (12,707,551)	$ (10,395,690)
Net loss per common share				
Basic and diluted	$ (0.46)	$ (0.79)	$ (0.73)	$ (1.75)
Weighted average shares outstanding				
Basic and diluted	17,743,229	6,628,778	17,503,796	5,948,570

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED
STATEMENTS OF COMPREHENSIVE LOSS
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	**2017**	**2018**	**2017**
Other comprehensive (loss) gain				
Changes in:				
Realized (gain) loss on investment securities recognized in investment income, net	$ (3,902)	$ —	$ (8,337)	$ —
Unrealized gain on investment securities	31,399	—	12,584	—
Change in unrealized gain on available for sale securities	27,497	—	4,247	—
Net loss	(8,230,556)	(4,889,869)	(12,707,551)	(10,050,005)
Comprehensive loss	$ (8,203,059)	$ (4,889,869)	$ (12,703,304)	$ (10,050,005)

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (Unaudited)

	Six Months Ended June 30,	
	2018	**2017**
Cash flows from operating activities:		
Net loss	$ (12,707,551)	$ (10,050,005)
Non-cash items included in net loss:		
Depreciation and amortization	174,342	341,058
Change in fair value of earn-out milestone liability	547,324	575,979
Deferred revenue	(250,000)	(250,000)
Stock-based compensation costs	3,371,301	804,592
Restricted shares issued	29,841	-
Amortization of deferred finance charges and debt discount associated with notes payable	4,237	35,370
Change in deferred rent liability	(2,955)	24,488
Net changes in:		
Accrued interest on investment securities	(2,392)	4,008
Advances, deposits and other current assets	(12,000)	94,461
Accounts payable and accrued liabilities	35,776	1,093,740
Net cash (used in) operating activities:	(8,812,077)	(7,326,309)
Cash flows from investing activities:		
Purchases of investment securities	(5,712,170)	-
Proceeds from sale and maturity of investment securities	5,000,000	1,680,000
Refund (deposit) on corporate office lease	(50,000)	100,000
Purchases of property and equipment	(77,698)	(21,126)
Net cash (used in) provided by investing activities	(839,868)	1,758,874
Cash flows from financing activities:		
Proceeds from sale of common stock equity, net of issuance costs	1,236,584	4,252,948
Proceeds from notes payable, net of issuance costs	9,725,000	-
Proceeds from exercise of common stock warrants	-	4,915,286
Principal payments on notes payable	-	(2,595,923)
Net cash provided by financing activities	10,961,584	6,572,311
Increase in cash and cash equivalents	1,309,639	1,004,876
Cash and cash equivalents at beginning of period	11,444,055	2,624,162
Cash and cash equivalents at end of period	$ 12,753,694	$ 3,629,038
Supplemental disclosures of cash flow information:		
Interest paid	$ 10,794	$ 56,386
Non-cash investing and financing activities:		
Fair value of warrants issued in connection with the notes payable	$ 507,116	$ -

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION
NOTES TO THE CONDENSED CONSOLIDATED
FINANCIAL STATEMENTS
(UNAUDITED)

FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018 AND 2017

Note 1. Business Description

Celsion Corporation, a Delaware corporation based in Lawrenceville, New Jersey, and its wholly owned subsidiary, CLSN Laboratories, Inc., also a Delaware corporation, referred to herein as "Celsion", "we", or "the Company," as the context requires, is a fully-integrated, development stage oncology drug company focused on developing a portfolio of innovative cancer treatments, including directed chemotherapies, immunotherapies and RNA- or DNA-based therapies. Our lead program is ThermoDox®, a proprietary heat-activated liposomal encapsulation of doxorubicin, currently in Phase III development for the treatment of primary liver cancer. Our product pipeline also includes GEN-1, a DNA-based immunotherapy for the localized treatment of ovarian and brain cancers. Our product pipeline is based on three platform technologies have demonstrated the potential to address a broad range of solid tumor cancer indications including novel nucleic acid-based immunotherapies, anti-cancer DNA or RNA therapies, and heat sensitive liposomal formulations of known chemotherapeutics. With these technologies we are working to develop and commercialize efficient, effective and targeted therapeutics that minimize the side-effects common to cancer treatments.

Note 2. Basis of Presentation

The accompanying unaudited condensed consolidated financial statements, which include the accounts of Celsion Corporation and its wholly owned subsidiary CLSN Laboratories, Inc, have been prepared in accordance with generally accepted accounting principles in the United States (GAAP) for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. All intercompany balances and transactions have been eliminated. Certain information and disclosures normally included in financial statements prepared in accordance with GAAP have been condensed or omitted pursuant to such rules and regulations.

In the opinion of management, all adjustments, consisting only of normal recurring accruals considered necessary for a fair presentation, have been included in the accompanying unaudited condensed consolidated financial statements. Operating results for the three and six-month periods ended June 30, 2018 are not necessarily indicative of the results that may be expected for any other interim period(s) or for any full year. For further information, refer to the financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 filed with the Securities and Exchange Commission (SEC) on March 27, 2018.

The preparation of financial statements in conformity with GAAP requires management to make judgments, estimates, and assumptions that affect the amount reported in the Company's financial statements and accompanying notes. Actual results could differ materially from those estimates. Events and conditions arising subsequent to the most recent balance sheet date have been evaluated for their possible impact on the financial statements and accompanying notes. No events and conditions would give rise to any information that required accounting recognition or disclosure in the financial statements other than those arising in the ordinary course of business.

Note 3. Financial Condition and Business Plan

Since inception, the Company has incurred substantial operating losses, principally from expenses associated with the Company's research and development programs, clinical trials conducted in connection with the Company's product candidates, and applications and submissions to the Food and Drug Administration. We have not generated significant revenue and have incurred significant net losses in each year since our inception. We have incurred approximately $274 million of cumulated net losses. As of June 30, 2018, we had approximately $26.3 million in cash, investment securities and interest receivable. We have substantial future capital requirements to continue our research and development activities and advance our product candidates through various development stages. The Company believes these expenditures are essential for the commercialization of its technologies.

The Company expects its operating losses to continue for the foreseeable future as it continues its product development efforts, and when it undertakes marketing and sales activities. The Company's ability to achieve profitability is dependent upon its ability to obtain governmental approvals, produce, and market and sell its new product candidates. There can be no assurance that the Company will be able to commercialize its technology successfully or that profitability will ever be achieved. The operating results of the Company have fluctuated significantly in the past. We have substantial future capital requirements associated with our continued research and development activities and to advance our product candidates through various stages of development. The Company believes these expenditures are essential for the commercialization of its technologies.

The actual amount of funds the Company will need to operate is subject to many factors, some of which are beyond the Company's control. These factors include the following:

- the progress of research activities;
- the number and scope of research programs;
- the progress of preclinical and clinical development activities;
- the progress of the development efforts of parties with whom the Company has entered into research and development agreements;
- the costs associated with additional clinical trials of product candidates;
- the ability to maintain current research and development licensing arrangements and to establish new research and development and licensing arrangements;
- the ability to achieve milestones under licensing arrangements;
- the costs involved in prosecuting and enforcing patent claims and other intellectual property rights; and
- the costs and timing of regulatory approvals.

The Company has based its estimate on assumptions that may prove to be wrong. The Company may need to obtain additional funds sooner or in greater amounts than it currently anticipates. Potential sources of financing include strategic relationships, public or private sales of the Company's shares or debt, the sale of its State of New Jersey net operating losses and other sources. If the Company raises funds by selling additional shares of common stock or other securities convertible into common stock, the ownership interest of existing stockholders may be diluted.

With the $26.3 million in cash, investment securities and interest receivable at June 30, 2018, the Company believes it has sufficient capital resources to fund its operations into the first half of 2020. The Company will be required to obtain additional funding in order to continue the development of its current product candidates within the anticipated time periods, if at all, and to continue to fund operations. As more fully discussed in Note 11, the Company has $12.2 million available for future sale under a controlled equity offering facility it has with Cantor Fitzgerald & Co. as of June 30, 2018.

Annually, the State of New Jersey enables approved technology and biotechnology businesses with New Jersey net operating tax losses the opportunity to sell these losses through the Technology Business Tax Certificate Program (NOL Program), thereby providing cash to companies to help fund their operations. The Company determined it met the eligibility requirements of the NOL Program for 2018 and successfully filed its application with the New Jersey Economic Development Authority in June 2018. In this application, the Company is requesting authorization of up to $12.5 million in cumulative New Jersey net operating losses to be eligible for sale; and would expect to net approximately 90% of the authorized amount. The Company expects a decision on the NOL Program in the third quarter of 2018.

Note 4. New Accounting Pronouncements

From time to time, new accounting pronouncements are issued by Financial Accounting Standards Board (FASB) and are adopted by us as of the specified effective date. Unless otherwise discussed, we believe that the impact of recently issued accounting pronouncements will not have a material impact on the Company's consolidated financial position, results of operations, and cash flows, or do not apply to our operations.

In May 2014, the FASB issued Accounting Standards Update (ASU) No. 2014-09 "Revenue from Contracts with Customers (Topic 606)," which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. ASU 2014 - 09 was originally going to be effective on January 1, 2017; however, the FASB issued ASU 2015-14, "Revenue from Contracts with Customers (Topic 606) - Deferral of the Effective Date," which deferred the effective date of ASU 2014-09 by one year to January 1, 2018. In March 2016, the FASB issued ASU No. 2016 - 8, "Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations. The amendments in this ASU do not change the core principle of ASU No. 2014 - 09 but the amendments clarify the implementation guidance on reporting revenue gross versus net. The effective date for the amendments in this ASU is the same as the effective date of ASU No. 2014-09. In April 2016, the FASB issued ASU No. 2016-10, "Revenue from Contracts with Customers (Identifying Performance Obligations and Licensing)," to clarify the implementation guidance on identifying performance obligations and licensing (collectively "the new revenue standards"). The new revenue standards allow for either "full retrospective" adoption, meaning the standard is applied to all periods presented, or "modified retrospective" adoption, meaning the standard is applied only to the most current period presented in the financial statements. The new revenue standard became effective for us on January 1, 2018. Under the new revenue standards, we recognize revenue following a five-step model prescribed under ASU No. 2014-09;(i) identify contract(s) with a customer;(ii) identify the performance obligations in the contract;(iii) determine the transaction price;(iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenues when (or as) we satisfy the performance obligation. As further described in Note 15, the Company currently has only one contract subject to the new revenue standards. After performance of the five-step model discussed above, the Company concluded the adoption of the new revenue standards as of January 1, 2018 did not change our revenue recognition policy nor does it have an effect on our financial statements using either the full retrospective or the modified retrospective adoption methods.

In January 2016, the FASB issued Accounting Standards Update No. 2016-01, "Recognition and Measurement of Financial Assets and Financial Liabilities," which requires that most equity investments be measured at fair value, with subsequent changes in fair value recognized in net income (other than those accounted for under the equity method of accounting). This guidance is effective for fiscal years, and interim periods within those years, beginning after December 15, 2017. Based on the Company's evaluation, the adoption of the ASU 2016-01 does not have a material impact on its consolidated financial statements or its disclosures.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, "Leases" (Topic 842), which requires that lessees recognize assets and liabilities for leases with lease terms greater than twelve months in the statement of financial position. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. This update also requires improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases. The update is effective for fiscal years beginning after December 15, 2018, including interim reporting periods within that reporting period. Early adoption is permitted. The Company is currently evaluating the impact the adoption of this guidance will have on its consolidated financial statements and disclosures.

In August 2016, the FASB issued Accounting Standard Update No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments." This update clarifies how certain cash receipts and payments should be presented in the statement of cash flows and is effective for interim and annual reporting periods beginning after December 15, 2017, with early adoption permitted. Based on the Company's evaluation, the adoption of the ASU 2016-01 did not have a material impact on its consolidated financial statements or its disclosures.

In November 2016, the FASB issued Accounting Standard Update No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. This update amends the guidance in ASC 230, including providing additional guidance related to transfers between cash and restricted cash and how entities present, in their statement of cash flows, the cash receipts and cash payments that directly affect the restricted cash accounts. This guidance is effective for annual reporting periods beginning after December 15, 2017, and interim periods within those years, with early adoption permitted. Based on the Company's evaluation, the adoption of the ASU 2016 - 01 did not have a material impact on its consolidated financial statements or its disclosures.

In January 2017, the FASB issued Accounting Standard Update No. 2017-01, "Business Combinations (Topic 805): Clarifying the Definition of a Business," which clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. This guidance is effective for annual reporting periods beginning after December 15, 2018, and interim periods within those years, with early adoption permitted. The Company is currently evaluating the impact of adoption on its consolidated financial statements.

In January 2017, the FASB issued Accounting Standard Update *No. 2017-04*, "Intangibles-Goodwill and Other, Simplifying the Test for Goodwill Impairment," which eliminates Step *2* from the goodwill impairment test. Under the revised test, an entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should *not* exceed the total amount of goodwill allocated to that reporting unit. This ASU is effective for any interim or annual impairment tests for fiscal years beginning after December 15, 2019, with early adoption permitted. The Company adopted this method for its impairment test of goodwill during 2017.

Note 5. Net Loss per Common Share

Basic loss per share is calculated based upon the net loss available to common shareholders divided by the weighted average number of common shares outstanding during the period. Diluted loss per share is calculated after adjusting the denominator of the basic earnings per share computation for the effects of all dilutive potential common shares outstanding during the period. The dilutive effects of preferred stock, options and warrants and their equivalents are computed using the treasury stock method.

The total number of shares of common stock issuable upon exercise of warrants, stock option grants and equity awards were 6,255,757 and 1,284,154 shares for the three and six-month periods ended June 30, 2018 and 2017, respectively. For the three and six month periods ended June 30, 2018 and 2017, diluted loss per common share was the same as basic loss per common share as all options and all warrants that were exercisable into shares of the Company's common stock were excluded from the calculation of diluted earnings attributable to common shareholders per common share as their effect would have been anti-dilutive.

Note 6. Fair Value of Financial Instruments

Short-term investments available for sale of $13,442,107 and $12,724,020 as of June 30, 2018 and December 31, 2017, respectively, consist of money market funds, commercial paper, corporate debt securities, and government agency debt securities. They are valued at estimated fair value, with unrealized gains and losses reported as a separate component of stockholders' equity in accumulated other comprehensive loss.

Securities available for sale are evaluated periodically to determine whether a decline in their value is other than temporary. The term "other than temporary" is not intended to indicate a permanent decline in value. Rather, it means that the prospects for near term recovery of value are not necessarily favorable, or that there is a lack of evidence to support fair values equal to, or greater than, the carrying value of the security. Management reviews criteria such as the magnitude and duration of the decline, as well as the reasons for the decline, to predict whether the loss in value is other than temporary. Once a decline in value is determined to be other than temporary, the value of the security is reduced and a corresponding charge to earnings is recognized.

A summary of the cost, fair value and maturities of the Company's short-term investments is as follows:

	June 30, 2018		December 31, 2017	
	Cost	Fair Value	Cost	Fair Value
Short-term investments				
Certificate of deposit	$ 1,714,375	$ 1,721,698	$ -	$ -
Corporate debt securities	11,731,979	11,720,409	12,734,184	12,724,020
Total	$ 13,446,354	$ 13,442,107	$ 12,734,184	12,724,020

	June 30, 2018		December 31, 2017	
	Cost	Fair Value	Cost	Fair Value
Short-term investment maturities				
Within 3 months	$ 4,241,961	$ 4,244,210	$ -	$ -
Between 3-12 months	9,204,393	9,197,897	12,734,184	12,724,020
Total	$ 13,446,354	$ 13,442,107	$ 12,734,184	$ 12,724,020

The following table shows the Company's investment securities gross unrealized losses and fair value by investment category and length of time that individual securities have been in a continuous unrealized loss position at June 30, 2018 and December 31, 2017. The Company has reviewed individual securities to determine whether a decline in fair value below the amortizable cost basis is other than temporary.

Available for sale securities (all unrealized holding gains and losses are less than 12 months at date of measurement)	**June 30, 2018**		**December 31, 2017**	
	Fair Value	**Unrealized Holding Gains (Losses)**	**Fair Value**	**Unrealized Holding Gains (Losses)**
Investments with unrealized gains	$ 4,986,645	$ 10,663	$ 748,148	$ 570
Investments with unrealized losses	8,455,462	(14,910)	11,975,872	(10,734)
Total	$ 13,442,107	$ (4,247)	$ 12,724,020	$ (10,164)

Investment income, which includes net realized losses on sales of available for sale securities and investment income interest and dividends, is summarized as follows:

	Three Months Ended June 30,	
	2018	**2017**
Interest and dividends accrued and paid	$ 69,559	$ 1,426
Realized gains	3,902	-
Investment income, net	$ 73,461	$ 1,426

	Six Months Ended June 30,	
	2018	**2017**
Interest and dividends accrued and paid	$ 138,848	$ 3,417
Realized gains	8,337	-
Investment income, net	$ 147,185	$ 3,417

Note 7. Fair Value Measurements

FASB Accounting Standards Codification (ASC) Section 820 "Fair Value Measurements and Disclosures," establishes a three-level hierarchy for fair value measurements which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The three levels of inputs that may be used to measure fair value are as follows:

Level 1: Quoted prices (unadjusted) or identical assets or liabilities in active markets that the entity has the ability to access as of the measurement date;

Level 2: Significant other observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data; and

Level 3: Significant unobservable inputs that reflect a reporting entity's own assumptions that market participants would use in pricing an asset or liability.

The fair values of securities available for sale are determined by obtaining quoted prices on nationally recognized exchanges (Level 1 inputs) or matrix pricing, which is a mathematical technique widely used in the industry to value debt securities without relying exclusively on quoted prices for the specific securities but rather by relying on the securities' relationship to other benchmark quoted securities (Level 2 inputs).

Cash and cash equivalents, other current assets, accounts payable and other accrued liabilities are reflected in the condensed consolidated balance sheet at their estimated fair values primarily due to their short-term nature. There were no transfers of assets or liabilities between Level 1 and Level 2 and no transfers in or out of Level 3 during the six months ended June 30, 2018 or 2017. All changes in Level 3 liabilities were the result of changes in the fair value of the earn-out milestone liability included in earnings (see Note 13).

Assets and liabilities measured at fair value are summarized below:

	Total Fair Value	Quoted Prices In Active Markets For Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Recurring items as of June 30, 2018				
Investment securities, available for sale	$ 13,442,107	$ 13,442,107	$ —	$ —
Recurring items as of December 31, 2017				
Investment securities, available for sale	$ 12,724,020	$ 12,724,020	$ —	$ —
Liabilities:				
Recurring items as of June 30, 2018				
Earn-out milestone liability (Note 13)	$ 13,085,849	$ —	$ —	$ 13,085,849
Recurring items as of December 31, 2017				
Earn-out milestone liability (Note 13)	$ 12,538,525	$ —	$ —	$ 12,538,525

Note 8. Acquisition of EGEN Assets

On June 20, 2014, we completed the acquisition of substantially all of the assets of EGEN, Inc., an Alabama corporation, which has changed its company name to EGWU, Inc. after the closing of the acquisition ("EGEN"), pursuant to an Asset Purchase Agreement dated as of June 6, 2014, by and between EGEN and Celsion (the "Asset Purchase Agreement"). We acquired all of EGEN's right, title and interest in and to substantially all of the assets of EGEN, including cash and cash equivalents, patents, trademarks and other intellectual property rights, clinical data, certain contracts, licenses and permits, equipment, furniture, office equipment, furnishings, supplies and other tangible personal property. In addition, CLSN Laboratories assumed certain specified liabilities of EGEN, including the liabilities arising out of the acquired contracts and other assets relating to periods after the closing date.

The total purchase price for the asset acquisition is up to $44.4 million, including potential future earnout payments of up to $30.4 million contingent upon achievement of certain earnout milestones set forth in the Asset Purchase Agreement. At the closing, we paid approximately $3.0 million in cash after the expense adjustment and issued 193,728 shares of our common stock to EGEN. The shares of common stock were issued in a private transaction exempt from registration under the Securities Act, pursuant to Section 4 (2) thereof. In addition, 47,862 shares of common stock were held back by us at the closing and are issuable to EGEN pending satisfactory resolution of any post-closing adjustments for expenses or in relation to EGEN's indemnification obligations under the Asset Purchase Agreement. These shares were issued to EGEN on June 16, 2017.

After its review in 2016, management concluded that there was no immediate opportunity to out-license TheraSilence. As a result of this analysis, the earnout payments were adjusted prior to 2017 and are now up to $24.4 million that may become payable, in cash, shares of our common stock or a combination thereof, at our option, upon achievement of the remaining two major milestone events as follows:

- $12.4 million will become payable upon achieving certain specified development milestones relating to an ovarian cancer study of GEN-1 (formerly known as EGEN-001) to be conducted by us or our subsidiary; and

- $12.0 million will become payable upon achieving certain specified development milestones relating to a GEN-1 glioblastoma multiforme brain cancer study to be conducted by us or our subsidiary.

The following table summarizes the fair values of these assets acquired and liabilities assumed related to the acquisition.

Property and equipment, net	$	35,000
In-process research and development		24,211,000
Other Intangible assets (Covenant not to compete)		1,591,000
Goodwill		1,976,000
Total assets:		27,813,000
Accounts payable and accrued liabilities		(235,000)
Net assets acquired	$	27,578,000

Acquired in-process research and development (IPR&D) consists of EGEN's drug technology platforms: TheraPlas and TheraSilence. The fair value of the IPR&D drug technology platforms was estimated to be $24.2 million as of the acquisition date. As of the closing of the acquisition, the IPR&D was considered indefinite lived intangible assets and will not be amortized. IPR&D is reviewed for impairment at least annually as of our third quarter ended September 30, and whenever events or changes in circumstances indicate that the carrying value of the assets might not be recoverable.

At September 30, 2017, after the Company's annual assessment of the totality of the events that could impair IPR&D, the Company determined certain IPR&D assets related to the development of its glioblastoma multiforme cancer (GBM) product candidate may be impaired. To arrive at this determination, the Company assessed the status of studies in GBM conducted by its competitors and the Company's strategic commitment of resources to its studies in primary liver cancer and ovarian cancer. The Company estimated the fair value of the IPR&D related to GBM at September 30, 2017 using the multi-period excess earnings method (MPEEM). The Company concluded that the GBM asset, valued at $9.4 million, was partially impaired and wrote down the GBM asset to $6.9 million, incurring a non-cash charge of $2.5 million in the third quarter of 2017.

At December 31, 2016, the Company determined one of the IPR&D assets related to the development of its RNA delivery system being developed with collaborators using their RNA product candidates may be impaired and after an assessment, the Company concluded that this asset, valued at $1.4 million, was impaired. Therefore, the Company wrote off the value of this IPR&D asset, incurring a non-cash charge of $1.4 million in the fourth quarter of 2016.

As no indicators of impairment existed during the first half of 2018, the Company concluded none of the other IPR&D assets were impaired at June 30, 2018.

Pursuant to the EGEN Purchase Agreement, EGEN provided certain covenants ("Covenant Not To Compete") to the Company whereby EGEN agreed, during the period ending on the seventh anniversary of the closing date of the acquisition on June 20, 2014, not to enter into any business, directly or indirectly, which competes with the business of the Company nor will it contact, solicit or approach any of the employees of the Company for purposes of offering employment. The Covenant Not To Compete which was valued at approximately $1.6 million at the date of the EGEN acquisition has a definitive life and is amortized on a straight-line basis over its life of 7 years. The Company recognized amortization expense of $56,829 and 113,658 in each of the three and six-month periods ended June 30, 2018 and 2017, respectively. The fair value of the Covenant Not to Compete was $681,950, net of $909,264 accumulated amortization, as of June 30, 2018 and $795,608, net of $795,606 accumulated amortization, as of December 31, 2017

The purchase price exceeded the estimated fair value of the net assets acquired by approximately $2.0 million which was recorded as Goodwill. Goodwill represents the difference between the total purchase price for the net assets purchased from EGEN and the aggregate fair values of tangible and intangible assets acquired, less liabilities assumed. Goodwill is reviewed for impairment at least annually as of our third quarter ended September 30 or sooner if we believe indicators of impairment exist. As of September 30, 2017, we concluded that the Company's fair value exceeded its carrying value therefore "it is not more likely than not" that the Goodwill was impaired.

Note 9. Accrued Liabilities

Other accrued liabilities as of June 30, 2018 and December 31, 2017 include the following:

		June 30, 2018		**December 31, 2017**
Amounts due to contract research organizations and other contractual agreements	$	908,556	$	665,373
Accrued payroll and related benefits		733,539		1,258,265
Accrued professional fees		370,298		264,668
Other		20,000		94,521
Total	$	2,032,393	$	2,282,827

Note 10. Note 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 anticipates that it 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%. 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.

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 is required to register the common stock underlying the Horizon Warrants within 90 days from the date of grant and use its best efforts to keep it effective.

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.

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. Also, in connection with each of the Horizon Credit Agreement, 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.

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.

For the three and six-month periods ended June 30, 2018 the Company incurred $10,794 in interest expense and amortized $4,237 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 June 30
2019	$ –
2020	–
2021	4,583,333
2022	5,000,000
2023 and thereafter	416,667
Subtotal of future principle payments	10,000,000
Net of unamortized debt issuance costs	(777,879)
Total	$ 9,222,121

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 are 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.

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 will expire 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 expire 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. For the three-period ended June 30, 2017 the Company incurred $11,731 in interest expense and amortized $17,685 as interest expense for deferred fees, debt discount and end of term charges in connection with the Hercules Credit Agreement. For the six-month period ended June 30, 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

The loan balance and end of term charges on the Hercules Credit Agreement was paid in full in June 2017.

Note 11. Stockholders' Equity

In September 2015, the Company filed with the Securities and Exchange Commission (the SEC) a $75 million shelf registration statement on Form S-3 (the 2015 Shelf Registration Statement) (File No. 333-206789) 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 September 25, 2015.

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.

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 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 14, 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 14, 2017 Public Offering.

In connection with the February 14, 2017 Public Offering, the Company filed with the Securities and Exchange Commission 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 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.

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 may 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 Company's previously filed and effective Registration Statement on Form S-3. 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. From February 1, 2013 through June 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.

The Company is not obligated to sell any ATM Shares under the ATM Agreement. Subject to the terms and conditions of the ATM Agreement, Cantor 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 ATM Shares from time to time based upon the Company's instructions, including any price, time or size limits or other customary parameters or conditions the Company may impose. In addition, pursuant to the terms and conditions of the ATM Agreement and subject to the instructions of the Company, Cantor may sell ATM Shares by any other method permitted by law, including in privately negotiated transactions.

The ATM Agreement will terminate upon the earlier of (i) the sale of ATM Shares under the ATM Agreement having an aggregate offering price of $25 million or (ii) the termination of the ATM Agreement by Cantor or the Company. The ATM Agreement may be terminated by Cantor or the Company at any time upon 10 days' notice to the other party, or by Cantor at any time in certain circumstances, including the occurrence of a material adverse change in the Company. The Company pays Cantor a commission of 3.0% of the aggregate gross proceeds from each sale of ATM Shares and has agreed to provide Cantor with customary indemnification and contribution rights. The Company also reimbursed Cantor for legal fees and disbursements of $50,000 in connection with entering into the ATM Agreement.

On October 2, 2015 and again on February 6, 2018, we filed prospectus supplements to the base prospectus that forms a part of the 2015 Shelf Registration Statement, pursuant to which we may offer and sell up to $17.5 million of shares collectively of common stock from time to time under the ATM Agreement. In January 2018 and thus far in 2018, we have sold 457,070 shares of common stock for net proceeds of $1.3 million under the ATM. As of the date of this filing, we have approximately $12.2 million remaining under the ATM.

Note 12. 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.

As of June 30, 2018, there were a total of 3,399,893 shares reserved, which were comprised of 3,034,741 shares subject to equity awards previously granted under the 2018 Plan and 2007 Plan and 365,152 shares available for future issuance under the 2018 Plan.

Total compensation cost charged related to employee stock options and restricted stock awards amounted to $3,217,633 and $676,918 for the three-month periods ended June 30, 2018 and 2017, respectively. Total compensation cost charged related to employee stock options and restricted stock awards amounted to $3,371,301 and $804,592 for the six-month periods ended June 30, 2018 and 2017, respectively. As of June 30, 2018, there was $2.7 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 1.3 years. The weighted average grant date fair values of the stock option awards granted during six-month periods ended June 30, 2018 and 2017 was $2.23 and $2.32, respectively.

A summary of stock option awards and restricted stock grants for the six-months ended June 30, 2018 is presented below:

	Stock Options		Restricted Stock Awards		Weighted Average
Equity Awards	**Options Outstanding**	**Weighted Average Exercise Price**	**Non-vested Restricted Stock Outstanding**	**Weighted Average Grant Date Fair Value**	**Contractual Terms of Equity Awards (in years)**
Equity awards outstanding at January 1, 2018	703,442	$ 10.34	–	$ –	
Equity awards granted	2,440,000	$ 2.22	11,000	$ 2.64	
Vested and issued	–	$ –	(6,000)	$ 2.64	
Equity awards forfeited, cancelled or expired	(113,701)	$ 40.23	–	$ –	
Equity awards outstanding at June 30, 2018	3,029,741	$ 4.48	5,000	$ 2.61	9.6
Aggregate intrinsic value of outstanding awards at June 30, 2018	$ 1,913,490		$ 1,700		
Equity awards exercisable at June 30, 2018	1,657,820	$ 2.95			9.6
Aggregate intrinsic value of awards exercisable at June 30, 2018	$ 983,522				

The fair values of stock options granted were estimated at the date of grant using the Black-Scholes option pricing model. The Black-Scholes option pricing 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:

	Six Months Ended June 30,	
	2018	2017
Risk-free interest rate	3.08%	2.21%
Expected volatility	100.0%	90.4%
Expected life (in years)	9.5 - 10.0	10.00
Expected forfeiture rate	–%	–%
Expected dividend yield	–%	–%

Expected volatilities utilized in the model are based on historical volatility of the Company's stock price. The risk-free interest rate is derived from values assigned to U.S. Treasury bonds with terms that approximate the expected option lives in effect at the time of grant. Starting in 2017, the Company elected to account for any forfeitures when they occur.

Note 13. 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.

As of June 30, 2018, March 31, 2018 and December 31, 2017, the Company fair valued these milestones at $13.1 million, $12.8 million and $12.5 million, respectively, and recognized a non-cash charge of $270,195 and $547,324 during the three and six months ended June 30, 2018 as a result of the change in the fair value of these milestones from the beginning of each period respectively.

As of June 30, 2017, March 31, 2017 and December 31, 2016, the Company fair valued these milestones at $13.8 million, $13.5 million and $13.2 million, respectively, and recognized a non-cash charge of $292,228 and $575,979 during the three and six months ended June 30, 2017 as a result of the change in the fair value of these milestones from the beginning of each period respectively.

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

Balance at January 1, 2018	$	12,538,525
Non-cash charge from the adjustment for the change in fair value included in net loss		547,324
Balance at June 30, 2018	$	13,085,849

The following is a schedule of the Company's risk-adjustment assessment of each milestone:

Date	Risk-adjustment Assessment of each Milestone	Discount Rate	Estimated Time to Achieve
June 30, 2018	35% to 80%	9%	0.83 to 1.00 year
March 31, 2018	35% to 80%	9%	1.08 to 1.25 years
December 31, 2017	35% to 80%	9%	1.33 to 1.50 years
June 30, 2017	50% to 80%	9%	1.50 to 2.00 years
March 31, 2017	50% to 80%	9%	1.75 to 2.25 years
December 31, 2016	50% to 80%	9%	2.00 to 2.50 years

Note 14. Warrants

Common Stock Warrants

Following is a summary of all warrant activity for the six months ended June 30, 2018:

Warrants	Number of Warrants Issued	Weighted Average Exercise Price
Warrants outstanding at December 31, 2017	3,058,402	$ 5.29
Warrants issued during the six months ended June 30, 2018 (see Note 10)	190,114	$ 2.63
Warrants outstanding at June 30, 2018	3,248,516	$ 5.14
Aggregate intrinsic value of outstanding warrants at June 30, 2018	$ 119,686	
Weighted average remaining contractual terms at June 30, 2018 (in years)	3.49	

Note 15. Contingent Liabilities and 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. 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 expired at the end of January 2018. 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.

Note 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.

On July 19, 2013, the Company and Hisun entered into a Memorandum of Understanding to pursue ongoing collaborations 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 collaboration 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 non-dilutive financing and the investment necessary to complete the technology transfer of its proprietary manufacturing process and the production of registration batches for the China territory;
- Hisun will collaborate 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.

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

Forward-Looking Statements

Statements and terms such as "expect", "anticipate", "estimate", "plan", "believe" and words of similar import regarding our expectations as to the development and effectiveness of our technologies, the potential demand for our products, and other aspects of our present and future business operations, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Although we believe that our expectations are based on reasonable assumptions within the bounds of our knowledge of our industry, business and operations, we cannot guarantee that actual results will not differ materially from our expectations. In evaluating such forward-looking statements, readers should specifically consider the various factors contained in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 filed with the Securities and Exchange Commission (SEC) on March 27, 2018, which factors include, without limitation, plans and objectives of management for future operations or programs or proposed new products or services; changes in the course of research and development activities and in clinical trials; possible changes in cost and timing of development and testing; possible changes in capital structure, financial condition, working capital needs and other financial items; changes in approaches to medical treatment; clinical trial analysis and future plans relating thereto; our ability to realize the full extent of the anticipated benefits of our acquisition of substantially all of the assets of EGEN, Inc., including achieving operational cost savings and synergies in light of any delays we may encounter in the integration process and additional unforeseen expenses; introduction of new products by others; possible licenses or acquisitions of other technologies, assets or businesses; and possible actions by customers, suppliers, partners, competitors and regulatory authorities. These and other risks and uncertainties could cause actual results to differ materially from those indicated by forward-looking statements.

The discussion of risks and uncertainties set forth in this Quarterly Report on Form 10-Q and in our most recent Annual Report on Form 10-K, as well as in other filings with the SEC, is not a complete or exhaustive list of all risks facing the Company at any particular point in time. We operate in a highly competitive, highly regulated and rapidly changing environment and our business is constantly evolving. Therefore, it is likely that new risks will emerge, and that the nature and elements of existing risks will change, over time. It is not possible for management to predict all such risk factors or changes therein, or to assess either the impact of all such risk factors on our business or the extent to which any individual risk factor, combination of factors, or new or altered factors, may cause results to differ materially from those contained in any forward-looking statement. We disclaim any obligation to revise or update any forward-looking statement that may be made from time to time by us or on our behalf.

Strategic and Clinical Overview

Celsion is a fully-integrated development stage oncology drug company focused on advancing a portfolio of innovative cancer treatments, including directed chemotherapies, DNA-mediated immunotherapy and RNA based therapies. Our lead product candidate is ThermoDox®, a proprietary heat-activated liposomal encapsulation of doxorubicin, currently in a Phase III clinical trial for the treatment of primary liver cancer (the OPTIMA Study). Second in our pipeline is GEN-1, a DNA-mediated immunotherapy for the localized treatment of ovarian and brain cancers. We have two platform technologies providing the basis for the future development of a range of therapeutics for difficult-to-treat forms of cancer including: Lysolipid Thermally Sensitive Liposomes, a heat sensitive liposomal based dosage form that targets disease with known therapeutics in the presence of mild heat and TheraPlas, a novel nucleic acid-based treatment for local transfection of therapeutic plasmids. With these technologies we are working to develop and commercialize more efficient, effective and targeted oncology therapies that maximize efficacy while minimizing side-effects common to cancer treatments.

ThermoDox®

ThermoDox® is being evaluated in a Phase III clinical trial for primary liver cancer, which we call the OPTIMA Study, which was initiated in 2014 and a Phase II clinical trial for recurrent chest wall breast cancer. ThermoDox® is a liposomal encapsulation of doxorubicin, an approved and frequently used oncology drug for the treatment of a wide range of cancers. Localized heat at hyperthermia temperatures (greater than 40° Celsius) releases the encapsulated doxorubicin from the liposome enabling high concentrations of doxorubicin to be deposited preferentially in and around the targeted tumor.

The OPTIMA Study. The OPTIMA Study represents an evaluation of ThermoDox® in combination with a first line therapy, radio frequency ablation (RFA), for newly diagnosed, intermediate stage HCC patients. HCC incidence globally is approximately 850,000 new cases per year and is the third largest cancer indication globally. Approximately 30% of newly diagnosed patients can be addressed with RFA alone.

On February 24, 2014, we announced that the United States Food and Drug Administration (the "FDA"), after its customary 30-day review period, provided clearance for the OPTIMA Study, which is a pivotal, double-blind, placebo-controlled Phase III trial of ThermoDox®, in combination with standardized RFA, for the treatment of primary liver cancer. The trial design of the OPTIMA Study is based on the comprehensive analysis of data from an earlier clinical trial called the HEAT Study, which is described below. The OPTIMA Study is supported by a hypothesis developed from an overall survival analysis of a large subgroup of patients from the HEAT Study.

We initiated the OPTIMA Study in 2014. The OPTIMA Study was designed with extensive input from globally recognized hepatocellular carcinoma ("HCC") researchers and expert clinicians and after receiving formal written consultation from the FDA. The OPTIMA Study is expected to enroll up to 550 patients globally at up to 70 sites in the United States, Canada, Europe Union, China and other countries in the Asia-Pacific region, and will evaluate ThermoDox® in combination with standardized RFA, which will require a minimum of 45 minutes across all investigators and clinical sites for treating lesions three to seven centimeters, versus standardized RFA alone. The primary endpoint for this clinical trial is overall survival ("OS"), and the secondary endpoints are progression free survival and safety. The statistical plan calls for two interim efficacy analyses by an independent Data Monitoring Committee (DMC).

On December 16, 2015, we announced that we had received the clinical trial application approval from the China Food and Drug Administration (the "CFDA") to conduct the OPTIMA Study in China. This clinical trial application approval will allow Celsion to enroll patients at up to 20 clinical sites in China. On April 26, 2016, we announced that the first patient in China had been enrolled in the OPTIMA Study. Results from the OPTIMA Study, if successful, will provide the basis for a global registration filing and marketing approval.

On April 9, 2018, the Company announced that the independent Data Monitoring Committee (DMC) for the Company's OPTIMA Study completed its last regularly scheduled review of the patients enrolled in the trial and has unanimously recommended that the OPTIMA Study continue according to protocol to its final data readout. The DMC's recommendation was based on the Committee's assessment of safety and data integrity of the first 75% of patients randomized in the trial as of February 5, 2018. The DMC reviewed study data at regular intervals, with the primary responsibilities of ensuring the safety of all patients enrolled in the study, the quality of the data collected, and the continued scientific validity of the study design. As part of its review of the first 413 patients, the DMC monitored a quality matrix relating to the total clinical data set, confirming the timely collection of data, that all data are current as well as other data collection and quality criteria.

Post-hoc data analysis from the Company's earlier Phase III HEAT Study suggest that ThermoDox® may substantially improve OS, when compared to the control group, in patients if their lesions undergo a 45-minute RFA procedure standardized for a lesion greater than 3 cm in diameter. Data from nine OS sweeps have been conducted since the top line progression free survival ("PFS") data from the HEAT Study were announced in January 2013, with each data set demonstrating substantial improvement in clinical benefit over the control group with statistical significance. On August 15, 2016, the Company announced updated results from its final retrospective OS analysis of the data from the HEAT Study. These results demonstrated that in a large, well bounded, subgroup of patients with a single lesion (n=285, 41% of the HEAT Study patients), treatment with a combination of ThermoDox® and optimized RFA provided an average 54% risk improvement in OS compared to optimized RFA alone. The Hazard Ratio ("HR") at this analysis is 0.65 (95% CI 0.45 - 0.94) with a p-value of 0.02. Median OS for the ThermoDox® group has been reached which translates into a two year survival benefit over the optimized RFA group (projected to be greater than 80 months for the ThermoDox® plus optimized RFA group compared to less than 60 months projection for the optimized RFA only group).

Additional findings from this most recent analysis specific to the Chinese patient cohort of 223 patients are summarized below:

- In the population of 154 patients with a single lesion who received optimized RFA treatment for 45 minutes or more showed a 53% risk improvement in OS (HR = 0.66) when treated with ThermoDox® plus optimized RFA.

- These data continue to support and further strengthen ThermoDox®'s potential to significantly improve OS compared to an RFA control in patients with lesions that undergo optimized RFA treatment for 45 minutes or more. The clinical benefit seen in the intent-to-treat Chinese patient cohort further confirms the importance of RFA heating time as 72% of patients in this large patient cohort in China received an optimized RFA treatment.

While this information should be viewed with caution since it is based on a retrospective analysis of a subgroup, we also conducted additional analyses that further strengthen the evidence for the HEAT Study sub-group. We commissioned an independent computational model at the University of South Carolina Medical School. The results indicate that longer RFA heating times correlate with significant increases in doxorubicin concentration around the RFA treated tissue. In addition, we conducted a prospective preclinical study in 22 pigs using two different manufacturers of RFA and human equivalent doses of ThermoDox® that clearly support the relationship between increased heating duration and doxorubicin concentrations.

On November 29, 2016, the Company announced the results of an independent analysis conducted by the National Institutes of Health (the "NIH") from the HEAT Study which reaffirmed the correlation between increased RFA burn time per tumor volume and improvements in overall survival. The NIH analysis, which sought to evaluate the correlation between RFA burn time per tumor volume (min/ml) and clinical outcome, concluded that increased burn time per tumor volume significantly improved overall survival in patients treated with RFA plus ThermoDox® compared to patients treated with RFA alone. For all patients with single lesions treated with RFA plus ThermoDox®:

- One-unit increase in RFA duration per tumor volume improved overall survival by 20% (p=0.017; n=227);
- More significant differences in subgroup of patients with RFA burn times per tumor volume greater than 2.5 minutes per ml;
- Cox multiple covariate analysis showed overall survival to be significant (p=0.038; Hazard Ratio = 0.85); and
- Burn time per tumor volume did not have a significant effect on overall survival in single lesion patients treated with RFA only.

The HEAT Study. On January 31, 2013, the Company announced that the HEAT Study, ThermoDox® in combination with RFA, did not meet the primary endpoint, PFS, of a Phase III clinical trial enrolling 701 patients with primary liver cancer. This determination was made after conferring with the HEAT Study independent DMC, that the HEAT Study did not meet the goal of demonstrating a clinically meaningful improvement in progression free survival. In the trial, ThermoDox® was well-tolerated with no unexpected serious adverse events. Following the announcement of the HEAT Study results, we continued to follow patients for OS, the secondary endpoint of the HEAT Study. We have conducted a comprehensive analysis of the data from the HEAT Study to assess the future strategic value and development strategy for ThermoDox®.

The DIGNITY Study. On December 14, 2015, we announced final data from our ongoing DIGNITY study, which is an open-label, dose-escalating Phase II trial of ThermoDox® in patients with recurrent chest wall breast cancer. The DIGNITY Study was designed to establish a safe therapeutic dose in Phase I, and to demonstrate local control in Phase II, including complete and partial responses, and stable disease as its primary endpoint. The DIGNITY Study was also designed to evaluate kinetics in ThermoDox® produced from more than one manufacturing site. Of the 29 patients enrolled and treated, 21 patients were eligible for evaluation of efficacy. Approximately 62% of evaluable patients experienced a local response, including six complete responses and seven partial responses.

Acquisition of EGEN Assets

On June 20, 2014, we completed the acquisition of substantially all of the assets of EGEN, Inc., an Alabama corporation, which has changed its company name to EGWU, Inc. after the closing of the acquisition ("EGEN"), pursuant to an asset purchase agreement dated as of June 6, 2014, by and between EGEN and Celsion (the "Asset Purchase Agreement"). We acquired all of EGEN's right, title and interest in and to substantially all of the assets of EGEN, including cash and cash equivalents, patents, trademarks and other intellectual property rights, clinical data, certain contracts, licenses and permits, equipment, furniture, office equipment, furnishings, supplies and other tangible personal property. In addition, CLSN Laboratories assumed certain specified liabilities of EGEN, including the liabilities arising out of the acquired contracts and other assets relating to periods after the closing date. The total purchase price for the asset acquisition is up to $44.4 million, including potential future earnout payments of up to $30.4 million contingent upon achievement of certain earnout milestones set forth in the Asset Purchase Agreement. At the closing, we paid approximately $3.0 million in cash after the expense adjustment and issued 193,728 shares of our common stock to EGEN. The shares of common stock were issued in a private transaction exempt from registration under the Securities Act, pursuant to Section 4(2) thereof. In addition, the Company held back 47,862 shares of common stock issuable to EGEN pending satisfactory resolution of any post-closing adjustments of expenses and EGEN's indemnification obligations under the EGEN Purchase Agreement (Holdback Shares). These shares were issued on June 16, 2017.

After its review in 2016, management concluded that there was no immediate opportunity to out-license TheraSilence. As a result of this analysis, the earnout payments were adjusted prior to 2017 and are now up to $24.4 million that may become payable, in cash, shares of our common stock or a combination thereof, at our option, upon achievement of two major milestone events as follows:

- $12.4 million will become payable upon achieving certain specified development milestones relating to an ovarian cancer study of GEN-1 (formerly known as EGEN-001) to be conducted by us or our subsidiary; and
- $12.0 million will become payable upon achieving certain specified development milestones relating to a GEN-1 glioblastoma multiforme brain cancer study to be conducted by us or our subsidiary.

Our obligations to make the earnout payments will terminate on the seventh anniversary of the closing date. In the acquisition, we purchased GEN-1, a DNA-based immunotherapy for the localized treatment of ovarian and brain cancers, and two platform technologies for the development of treatments for those suffering with difficult-to-treat forms of cancer, novel nucleic acid-based immunotherapies and other anti-cancer DNA or RNA therapies, including TheraPlas and TheraSilence.

GEN-1

GEN-1 is a DNA-based immunotherapeutic product for the localized treatment of ovarian and brain cancers by intraperitoneally administering an Interleukin-12 ("IL-12") plasmid formulated with our proprietary TheraPlas delivery system. In this DNA-based approach, the immunotherapy is combined with a standard chemotherapy drug, which can potentially achieve better clinical outcomes than with chemotherapy alone. We believe that increases in IL-12 concentrations at tumor sites for several days after a single administration could create a potent immune environment against tumor activity and that a direct killing of the tumor with concomitant use of cytotoxic chemotherapy could result in a more robust and durable antitumor response than chemotherapy alone. We believe the rationale for local therapy with GEN-1 are based on the following:

- Loco-regional production of the potent cytokine IL-12 avoids toxicities and poor pharmacokinetics associated with systemic delivery of recombinant IL-12;
- Persistent local delivery of IL-12 lasts up to one week and dosing can be repeated;
- Ideal for long-term maintenance therapy.

GEN-I OVATION Study. In February 2015, we announced that the FDA accepted, without objection, the Phase I dose-escalation clinical trial of GEN-1 in combination with the standard of care in neo-adjuvant ovarian cancer (the OVATION Study). On September 30, 2015, we announced enrollment of the first patient in the OVATION Study. The OVATION Study is designed to (i) to identify a safe, tolerable and potentially therapeutically active dose of GEN-1 by recruiting and maximizing an immune response and (ii) to enroll three to six patients per dose level and will evaluate safety and efficacy and attempt to define an optimal dose for a follow-on Phase I/II study. In addition, the OVATION Study establishes a unique opportunity to assess how cytokine-based compounds such as GEN-1, directly affect ovarian cancer cells and the tumor microenvironment in newly diagnosed patients. The study is designed to characterize the nature of the immune response triggered by GEN-1 at various levels of the patients' immune system, including:

- Infiltration of cancer fighting T-cell lymphocytes into primary tumor and tumor microenvironment including peritoneal cavity, which is the primary site of metastasis of ovarian cancer;
- Changes in local and systemic levels of immuno-stimulatory and immunosuppressive cytokines associated with tumor suppression and growth, respectively; and
- Expression profile of a comprehensive panel of immune related genes in pre-treatment and GEN-1-treated tumor tissue.

We initiated the OVATION Study at four clinical sites at the University of Alabama at Birmingham, Oklahoma University Medical Center, Washington University in St. Louis and the Medical College of Wisconsin. During 2016 and 2017, we announced data from the first fourteen patients in the OVATION Study, who completed treatment.

On October 3, 2017, we announced final clinical and translational research data from the OVATION Study, a Phase Ib dose escalating clinical trial combining GEN-1 with the standard of care for the treatment of newly-diagnosed patients with advanced Stage III/IV ovarian cancer who will undergo neoadjuvant chemotherapy followed by interval debulking surgery.

Key translational research findings from all evaluable patients are consistent with the earlier reports from partial analysis of the data and are summarized below:

- The intraperitoneal treatment of GEN-1 in conjunction with neoadjuvant chemotherapy resulted in dose dependent increases in IL-12 and Interferon-gamma (IFN-g) levels that were predominantly in the peritoneal fluid compartment with little to no changes observed in the patients' systemic circulation. These and other post-treatment changes including decreases in VEGF levels in peritoneal fluid are consistent with an IL-12 based immune mechanism;

- Consistent with the previous partial reports, the effects observed in the IHC analysis were pronounced decreases in the density of immunosuppressive T-cell signals (Foxp3, PD-1, PDL-1, IDO-1) and increases in CD8+ cells in the tumor microenvironment;

- The ratio of CD8+ cells to immunosuppressive cells was increased in approximately 75% of patients suggesting an overall shift in the tumor microenvironment from immunosuppressive to pro-immune stimulatory following treatment with GEN-1. An increase in CD8+ to immunosuppressive T-cell populations is a leading indicator and believed to be a good predictor of improved overall survival; and

- Analysis of peritoneal fluid by cell sorting, not reported before, shows treatment-related decrease in the percentage of immunosuppressive T-cell (Foxp3+), which is consistent with the reduction of Foxp3+ T-cells in the primary tumor tissue, and a shift in tumor naïve CD8+ cell population to more efficient tumor killing memory effector CD8+ cells.

The Company also reported positive clinical data from the first fourteen patients who have completed treatment in the OVATION Study. GEN-1 plus standard chemotherapy produced positive clinical results, with no dose limiting toxicities and positive dose dependent efficacy signals which correlate well with positive surgical outcomes as summarized below:

- Of the fourteen patients treated in the entire study, two patients demonstrated a complete response, ten patients demonstrated a partial response and two patients demonstrated stable disease, as measured by RECIST criteria. This translates to a 100% disease control rate (“DCR”) and an 86% objective response rate (“ORR”). Of the five patients treated in the highest dose cohort, there was a 100% objective response rate with one complete response and four partial responses;

- Fourteen patients had successful resections of their tumors, with nine patients (64%) having an R0 resection, which indicates a microscopically margin-negative resection in which no gross or microscopic tumor remains in the tumor bed. Seven out of eight (87%) patients in the highest two dose cohorts experienced a R0 surgical resection. All five patients treated at the highest dose cohort experienced a R0 surgical resection;

- All patients experienced a clinically significant decrease in their CA-125 protein levels as of their most recent study visit. CA-125 is used to monitor certain cancers during and after treatment. CA-125 is present in greater concentrations in ovarian cancer cells than in other cells; and

- Of the 13 patients who received GEN-1 treatment in all four dose escalating cohorts, only five patients’ cancers have progressed as of March 31, 2018. Median PFS for all 13 patients in the OVATION Study is 21.4 months as of March 15, 2018 and counting. This compares favorably to the historical median progression-free survival of 12 months for newly diagnosed patients with Stage III and IV ovarian cancer that undergo neoadjuvant chemotherapy followed by interval debulking surgery.

GEN-1 OVATION II Study. The Company held an Advisory Board Meeting on September 27, 2017 with the clinical investigators and scientific experts including those from Roswell Park Cancer Institute, Vanderbilt University Medical School, and M.D. Anderson Cancer Center to review and finalize clinical, translational research and safety data from the Phase IB OVATION Study in order to determine the next steps forward for our GEN-1 immunotherapy program.

On November 13, 2017, the Company filed its Phase I/II clinical trial protocol with the U.S. Food and Drug Administration for GEN-1 for the localized treatment of ovarian cancer. The protocol is designed with a single dose escalation phase to 100 mg/m² to identify a safe and tolerable dose of GEN-1 while maximizing an immune response. The 12 patient Phase I portion of the study will be followed by a continuation at the selected dose in up to 118 patient randomized Phase II study. GEN-1 has demonstrated positive safety and efficacy data in the recently completed dose escalation Phase IB trial in combination with neoadjuvant chemotherapy.

The study protocol was unanimously supported by an expert medical advisory board and lead investigators from the Phase IB OVATION Study and is summarized below:

- Open label, 1:1 randomized design;

- Enrollment up to 130 patients with Stage III/IV ovarian cancer patients at ten U.S. centers; and

- Primary endpoint of improvement in progression-free survival (PFS) comparing GEN-1 with neoadjuvant chemotherapy versus neoadjuvant chemotherapy alone.

TheraPlas Technology Platform. TheraPlas is a technology platform for the delivery of DNA and messenger RNA ("mRNA") therapeutics via synthetic non-viral carriers and is capable of providing cell transfection for double-stranded DNA plasmids and large therapeutic RNA segments such as mRNA. There are two components of the TheraPlas system, a plasmid DNA or mRNA payload encoding a therapeutic protein and a delivery system. The delivery system is designed to protect the DNA/RNA from degradation and promote trafficking into cells and through intracellular compartments. We designed the delivery system of TheraPlas by chemically modifying the low molecular weight polymer to improve its gene transfer activity without increasing toxicity. We believe TheraPlas is a viable alternative to current approaches to gene delivery due to several distinguishing characteristics, including enhanced molecular versatility that allows for complex modifications to improve activity and safety.

Technology Development and Licensing Agreements. Our current efforts and resources are applied on the development and commercialization of cancer drugs including tumor-targeting chemotherapy treatments using focused heat energy in combination with heat-activated drug delivery systems, immunotherapies and RNA-based therapies.

On August 8, 2016, we signed a Technology Transfer, Manufacturing and Commercial Supply Agreement (the "GEN-1 Agreement") with Zhejiang Hisun Pharmaceutical Co. Ltd. (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 obtained. The GEN-1 Agreement will help to support supply for both ongoing and planned clinical studies in the United States, and for potential future studies of GEN-1 in China. GEN-1 is currently being evaluated by Celsion in first line ovarian cancer patients.

In June 2012, Celsion and Hisun signed a long-term commercial supply agreement for the production of ThermoDox®. Hisun is one the largest manufacturers of chemotherapy agents globally, including doxorubicin. In July 2013, the ThermoDox® collaboration was expanded to focus on next generation liposomal formulation development with the goal of creating safer, more efficacious versions of marketed cancer chemotherapeutics. During 2015, Hisun successfully completed the manufacture of three registration batches for ThermoDox® and has obtained regulatory approvals to supply ThermoDox® to participating clinical trial sites in all of the countries of South East Asia, Europe and North America, as well as to the European Union countries allowing for early access to ThermoDox®. The future manufacturing of clinical and commercial supplies by Hisun will result in a cost structure allowing Celsion to profitably access all global markets, including third world countries, and help accelerate the Company's product development program in China for ThermoDox® in primary liver cancer and other approved indications.

Business Plan

As a clinical stage biopharmaceutical company, our business and our ability to execute our strategy to achieve our corporate goals are subject to numerous risks and uncertainties. Material risks and uncertainties relating to our business and our industry are described in "Part II, Item 1A. Risk Factors" in this Quarterly Report on Form 10-Q.

Since inception, the Company has incurred substantial operating losses, principally from expenses associated with the Company's research and development programs, clinical trials conducted in connection with the Company's product candidates, and applications and submissions to the Food and Drug Administration. We have not generated significant revenue and have incurred significant net losses in each year since our inception. We have incurred approximately $274 million of cumulated net losses. As of June 30, 2018, we had approximately $26.3 million in cash, investment securities and interest receivable. We have substantial future capital requirements to continue our research and development activities and advance our product candidates through various development stages. The Company believes these expenditures are essential for the commercialization of its technologies.

The Company expects its operating losses to continue for the foreseeable future as it continues its product development efforts, and when it undertakes marketing and sales activities. The Company's ability to achieve profitability is dependent upon its ability to obtain governmental approvals, produce, and market and sell its new product candidates. There can be no assurance that the Company will be able to commercialize its technology successfully or that profitability will ever be achieved. The operating results of the Company have fluctuated significantly in the past. We have substantial future capital requirements associated with our continued research and development activities and to advance our product candidates through various stages of development. The Company believes these expenditures are essential for the commercialization of its technologies.

The actual amount of funds the Company will need to operate is subject to many factors, some of which are beyond the Company's control. These factors include the following:

- the progress of research activities;
- the number and scope of research programs;
- the progress of preclinical and clinical development activities;

- the progress of the development efforts of parties with whom the Company has entered into research and development agreements;
- the costs associated with additional clinical trials of product candidates;
- the ability to maintain current research and development licensing arrangements and to establish new research and development and licensing arrangements;
- the ability to achieve milestones under licensing arrangements;
- the costs involved in prosecuting and enforcing patent claims and other intellectual property rights; and
- the costs and timing of regulatory approvals.

The Company has based its estimate on assumptions that may prove to be wrong. The Company may need to obtain additional funds sooner or in greater amounts than it currently anticipates. Potential sources of financing include strategic relationships, public or private sales of the Company's shares or debt and other sources. If the Company raises funds by selling additional shares of common stock or other securities convertible into common stock, the ownership interest of existing stockholders may be diluted.

With the $26.3 million in cash, investment securities and interest receivable at June 30, 2018, the Company believes it has sufficient capital resources to fund its operations into the first half of 2020. The Company will be required to obtain additional funding in order to continue the development of its current product candidates within the anticipated time periods, if at all, and to continue to fund operations. As more fully discussed in Note 11, the Company has $12.2 million available for future sale under a controlled equity offering facility it has with Cantor Fitzgerald & Co. as of June 30, 2018.

Annually, the State of New Jersey enables approved technology and biotechnology businesses with New Jersey net operating tax losses the opportunity to sell these losses through the Technology Business Tax Certificate Program (NOL Program), thereby providing cash to companies to help fund their operations. The Company determined it met the eligibility requirements of the NOL Program for 2018 and successfully filed its application with the New Jersey Economic Development Authority in June 2018. In this application, the Company is requesting authorization of up to $12.5 million in cumulative New Jersey net operating losses to be eligible for sale; and would expect to net approximately 90% of the authorized amount. The Company expects a decision on the NOL Program in the third quarter of 2018.

Financing Overview

Equity and Debt Financings

During 2017 and thus far in 2018, we entered into a $10 million loan facility and we issued a total of 15.4 million shares of common stock in the following equity transactions for an aggregate $43.9 million in gross proceeds.

- 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 anticipates that it 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%. 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.
- The Company received gross proceeds of $22.0 million from the exercise of warrants to purchase approximately 7.6 million shares of common stock in 2017.
- 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 "October 2007 Offering") of 2,640,000 shares of common stock of the Company and warrants to purchase an aggregate of 1,320,000 shares of common stock of the Company. Each share of common stock was 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 has agreed to purchase the shares and related Investor Warrants from the Company at a price of $2.325 per share and related Investor Warrant. 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. The Company received $6.6 million of gross proceeds from the sale of the Shares and Investor Warrant. The October 2017 Offering closed on October 31, 2017.

- 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 $4.2 million 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 $0.8 million, are immediately exercisable for $0.01 per share of common stock and do not have an expiration date. As of August 11, 2017, the Prefunded Series CCC Warrants were fully exercised. 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.

- On February 14, 2017, the Company entered into a securities purchase agreement whereby it sold, in a public offering (the February 14, 2017 Public Offering), an aggregate of 1,384,705 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, are 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 14, 2017 Public Offering. During the first quarter of 2017, all 185,713 of the Series BB Pre-Funded warrants were exercised in full.

- We are a party to a Controlled Equity Offering^{SM} Sales Agreement (ATM) dated as of February 1, 2013 with Cantor Fitzgerald & Co., pursuant to which we may sell additional shares of our common stock having an aggregate offering price of up to $25 million through “at-the-market” equity offerings from time to time. From February 1, 2013 through December 31, 2016, the Company sold and issued an aggregate of 105,681 shares of common stock under the ATM, receiving approximately $7.4 million in net proceeds. During 2017, the Company sold 1,221,348 shares of common stock under the ATM, receiving approximately $3.9 million in net proceeds. Thus far in 2018, the Company sold 457,070 shares of common stock under the ATM, receiving approximately $1.2 million in net proceeds. On October 2, 2015 and again on February 6, 2018, we filed prospectus supplements to the base prospectus that forms a part of the 2015 Shelf Registration Statement, pursuant to which we may offer and sell up to $17.5 million of shares collectively of common stock from time to time under the ATM Agreement. We had $12.2 million available for sale under the ATM Agreement as of June 30, 2018.

On June 20, 2014, we completed the acquisition of substantially all the assets of EGEN, Inc. At the closing, we paid approximately $3.0 million in cash and issued 193,728 shares of its common stock to EGEN. In addition, 47,862 shares of common stock were issuable to EGEN pending satisfactory resolution of any post-closing adjustments of expenses and EGEN’s indemnification obligations under the EGEN Purchase Agreement. These shares were issued on June 16, 2017.

Significant Accounting Policies

Our significant accounting policies are more fully described in Note 1 to our consolidated financial statements included in our 2017 Annual Report on Form 10-K for the year ended December 31, 2017 filed with the SEC on March 27, 2018.

In May 2014, the FASB issued Accounting Standards Update (ASU) No. 2014-09 “Revenue from Contracts with Customers (Topic 606),” which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. ASU 2014 - 09 was originally going to be effective on January 1, 2017; however, the FASB issued ASU 2015-14, “Revenue from Contracts with Customers (Topic 606) - Deferral of the Effective Date,” which deferred the effective date of ASU 2014-09 by one year to January 1, 2018. In March 2016, the FASB issued ASU No. 2016 - 8, “Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations. The amendments in this ASU do not change the core principle of ASU No. 2014 - 09 but the amendments clarify the implementation guidance on reporting revenue gross versus net. The effective date for the amendments in this ASU is the same as the effective date of ASU No. 2014-09. In April 2016, the FASB issued ASU No. 2016-10, “Revenue from Contracts with Customers (Identifying Performance Obligations and Licensing),” to clarify the implementation guidance on identifying performance obligations and licensing (collectively “the new revenue standards”). The new revenue standards allow for either “full retrospective” adoption, meaning the standard is applied to all periods presented, or “modified retrospective” adoption, meaning the standard is applied only to the most current period presented in the financial statements. The new revenue standard became effective for us on January 1, 2018. Under the new revenue standards, we recognize revenue following a five-step model prescribed under ASU No. 2014-09;(i) identify contract(s) with a customer;(ii) identify the performance obligations in the contract;(iii) determine the transaction price;(iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenues when (or as) we satisfy the performance obligation. As further described in Note 15, the Company currently has only one contract subject to the new revenue standards. After performance of the five-step model discussed above, the Company concluded the adoption of the new revenue standards as of January 1, 2018 did not change our revenue recognition policy nor does it have an effect on our financial statements using either the full retrospective or the modified retrospective adoption methods.

Please refer to Note 2 of the Financial Statements contained in this Form 10-K. Also refer to **Item IA, Risk Factors**, including, but not limited to, *“We will need to raise substantial additional capital to fund our planned future operations, and we may be unable to secure such capital without dilutive financing transactions. If we are not able to raise additional capital, we may not be able to complete the development, testing and commercialization of our product candidates.”*

As a clinical stage biopharmaceutical company, our business and our ability to execute our strategy to achieve our corporate goals are subject to numerous risks and uncertainties. Material risks and uncertainties relating to our business and our industry are described in “Item 1A. Risk Factors” under “Part II: Other Information” included herein.

FINANCIAL REVIEW FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018 AND 2017

Results of Operations

For the three months ended June 30, 2018, our net loss was $8.2 million compared to a net loss of $4.9 million for the same period of 2017. For the six months ended June 30, 2018, our net loss was $12.7 million compared to a net loss of $10.1 million for the same period of 2017. In the second quarter and for the first half of 2018, the Company incurred $3.2 million and $3.4 million, respectively, of non-cash stock option expense compared to $0.7 million and $0.8 million, respectively, during the same periods of 2017. With the $26.3 million in cash and investments on hand at June 30, 2018, the Company believes it has sufficient capital resources to fund its operations into the first half of 2020.

	Three Months Ended June 30,			
	(In thousands)		Change Increase (Decrease)	
	2018	2017		%
Licensing Revenue:	$ 125	$ 125	$ –	–%
Operating Expenses:				
Clinical Research	4,151	2,760	1,391	50.4%
Chemistry, Manufacturing and Controls	443	287	156	54.4%
Research and development expenses	4,594	3,047	1,547	51.8%
General and administrative expenses	3,542	1,649	1,893	114.8%
Total operating expenses	8,136	4,696	3,440	73.3%
Loss from operations	$ (8,011)	$ (4,571)	$ (3,440)	75.3%

	Six Months Ended June 30,			
	(In thousands)		Change Increase (Decrease)	
	2018	2017		%
Licensing Revenue:	$ 250	$ 250	$ –	–%
Operating Expenses:				
Clinical Research	6,637	5,907	730	12.4%
Chemistry, Manufacturing and Controls	698	615	83	13.5%
Research and development expenses	7,335	6,522	813	12.5%
General and administrative expenses	5,207	3,117	2,090	67.1%
Total operating expenses	12,542	9,639	2,903	30.1%
Loss from operations	$ (12,292)	$ (9,389)	$ 2,903	30.9%

Comparison of the Three Months ended June 30, 2018 and 2017

Licensing Revenue

In January 2013, we entered into a technology development contract with Hisun, pursuant to which Hisun paid us a non-refundable technology transfer fee of $5.0 million to support our development of ThermoDox® in the China territory. 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 be amortized over the ten-year term of the agreement; therefore, we recorded deferred revenue of $125,000 in each of the first and second quarters of 2018 and 2017.

Research and Development Expenses

Research and development (R&D) expenses increased by $1.5 million to $4.6 million in the second quarter of 2018 from $3.0 million in the same period of 2017. Costs associated with the OPTIMA Study increased by $0.5 million to $2.0 million in the second quarter of 2018 compared to $1.5 million in the same period of 2017. This increase in costs is associated with higher patient enrollment in the second quarter of 2018 compared to the same period of 2017. Costs associated with the startup of the OVATION II Study were $0.1 million in the second quarter of 2018. Preclinical and regulatory costs were $0.1 million in the second quarter of 2018 and were insignificant in the same period of 2017. Other clinical costs increased by $0.5 million to $1.0 million in the second quarter of 2018 compared to $0.5 million in the same period of 2017. This increase is mostly attributable to an increase of $0.4 million in non-cash stock compensation expense during the second quarter of 2018 compared to the same period of 2017. Costs associated with the production and distribution of ThermoDox® to support the OPTIMA Study increased $0.1 million to $0.4 million in the second quarter of 2018 compared to $0.3 million in the same period of 2017. R&D costs associated with the development of GEN-1 to support the OVATION Studies increased by $0.3 million to $1.0 million in the second quarter of 2018 compared to $0.7 million in the same period of 2017.

General and Administrative Expenses

General and administrative (G&A) expenses increased to $3.5 million in the second quarter of 2018 compared to $1.6 million in the same period of 2017. This increase is mostly attributable to an increase in professional fees of approximately $0.1 million and an increase in compensation expenses which includes $1.7 million in non-cash stock compensation expense in the second quarter of 2018 compared to the same period of 2017.

Change in Earn-out Milestone Liability

The total aggregate purchase price for the acquisition of assets from EGEN 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 and utilizing a discount rate based on the estimated time to achieve the milestone. These milestone payments are fair valued at the end of each quarter and any change in their value is recognized in the condensed consolidated financial statements. As of June 30, 2018, the Company fair valued these milestones at $13.1 million and recognized a non-cash charge of $0.3 million in the second quarter of 2018 as a result of the change in the fair value of these milestones from $12.8 million at March 31, 2018. At June 30, 2017, the Company fair valued these milestones at $13.8 million and recognized a non-cash charge of $0.3 million in the second quarter of 2017 as a result of the change in the fair value of these milestones from $13.5 million at March 31, 2017.

Investment income and interest expense

The Company realized $0.1 million of interest income from its short-term investments during the second quarter of 2018. Investment income was negligible in second quarter of 2017.

In connection with its debt facilities, the Company interest expense was insignificant in the second quarters of 2018 and 2017. The Company entered into a new loan facility with Horizon Technology Finance Corporation on June 27, 2018. In the second quarter of 2017, Company paid off its prior credit facility with Hercules Technology Growth Capital, Inc.

Deemed dividend

During the three months ended June 30, 2017, we recognized deemed dividends totaling $0.4 million collectively in regard to multiple agreements with certain warrant holders, pursuant to which these warrant holders agreed to exercise, and the Company agreed to reprice, certain warrants. Warrants to purchase a total of 790,410 shares of common stock were repriced at $2.70 and warrants to purchase 506,627 shares of common stock were repriced at $1.65 and the Company received $3.0 million in aggregate gross proceeds from the exercise of these repriced warrants.

Comparison of the Six Months ended June 30, 2018 and 2017

Licensing Revenue

In January 2013, we entered into a technology development contract with Hisun, pursuant to which Hisun paid us a non-refundable technology transfer fee of $5.0 million to support our development of ThermoDox® in the China territory. 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 be amortized over the ten-year term of the agreement; therefore, we recorded deferred revenue of $250,000 in each of the first halves of 2018 and 2017.

Research and Development Expenses

Research and development (R&D) expenses increased by $0.8 million to $7.3 million in the first half of 2018 from $6.5 million in the same period of 2017. Costs associated with the OPTIMA Study were $3.3 million in the first half of 2018 compared to $3.0 million in the same period of 2017. This is mostly due to higher patient enrollment in during the first half of 2018 compared to the same period of 2017. Costs associated with the OVATION Studies were $0.2 million in the first half of 2018 compared to $0.1 million in the same period of 2017. The Company announced the completion of enrollment of all cohorts of the OVATION I Study in July 2017 and reported final clinical and translational research data in October 2017. Other clinical costs were $1.4 million in the first half of 2018 compared to $1.4 million in the same period of 2017. In the first half of 2018, the Company incurred an increase of $0.4 million in non-cash stock compensation expense compared to the same period of 2017. In the first half of 2017, the Company executed a cost reduction plan by reducing the costs associated with the support of the ThermoDox® studies in Europe. The majority of the $0.5 million in 2017 costs were realized in the first half of 2017. ThermoDox® preclinical and regulatory R&D costs were $0.2 million in the first half of 2018 compared to $0.1 million in the same period of 2017. Costs associated with the production of ThermoDox® to support the OPTIMA Study increased to $0.7 million in the first six months of 2018 compared to $0.6 million in the same period of 2017. Costs associated with the research and development of GEN-1 increased by $0.4 million to $1.6 million in the first half of 2018 compared to $1.2 million in the same period of 2017.

General and Administrative Expenses

General and administrative expenses increased by $2.1 million to $5.2 million in the first six months of 2018 compared to $3.1 million in the same period of 2017. This increase is mostly attributable to an increase in professional fees of approximately $0.2 million and an increase in compensation expenses totaling $1.8 million in non-cash stock compensation expense in the first half of 2018 compared to the same period of 2017.

Change in Earn-out Milestone Liability

The total aggregate purchase price for the acquisition of assets from EGEN 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 and utilizing a discount rate based on the estimated time to achieve the milestone. These milestone payments are fair valued at the end of each quarter and any change in their value is recognized in the condensed consolidated financial statements. As of June 30, 2018, the Company fair valued these milestones at $13.1 million and recognized a non-cash charge of $0.6 million in the first half of 2018 as a result of the change in the fair value of these milestones from $12.5 million at December 31, 2017. The Company recognized a non-cash charge of $0.6 million in the first half of 2017 as a result of the change in the fair value of these milestones at $13.8 million at June 30, 2017 from $13.2 million at December 31, 2016.

Investment income and interest expense

The Company realized $0.1 million of interest income from its short-term investments during the first half of 2018. Investment income was negligible in the first half of 2017.

In connection with its debt facilities, the Company interest expense was insignificant in the first half of 2018 compared to $0.1 million in the same period of 2017. The Company entered into a new loan facility with Horizon Technology Finance Corporation on June 27, 2018. In the second quarter of 2017, Company paid off its prior credit facility with Hercules Technology Growth Capital, Inc.

Deemed dividend

During the six months ended June 30, 2017, we recognized deemed dividends totaling $0.4 million collectively in regard to multiple agreements with certain warrant holders, pursuant to which these warrant holders agreed to exercise, and the Company agreed to reprice, certain warrants. Warrants to purchase a total of 790,410 shares of common stock were repriced at $2.70 and warrants to purchase 506,627 shares of common stock were repriced at $1.65 and the Company received $3.0 million in aggregate gross proceeds from the exercise of these repriced warrants.

Financial Condition, Liquidity and Capital Resources

Since inception we have incurred significant losses and negative cash flows from operations. We have financed our operations primarily through the net proceeds from the sales of equity, credit facilities and amounts received under our product licensing agreement with Yakult and our technology development agreement with Hisun. The process of developing and commercializing ThermoDox®, GEN-1 and other product candidates and technologies requires significant research and development work and clinical trial studies, as well as significant manufacturing and process development efforts. We expect these activities, together with our general and administrative expenses to result in significant operating losses for the foreseeable future. Our expenses have significantly and regularly exceeded our revenue, and we had an accumulated deficit of $274 million at June 30, 2018.

At June 30, 2018 we had total current assets of $26.3 million (substantially all of which is cash, cash equivalents and short-term investments and related interest receivable on short-term investments) and current liabilities of $6.2 million, resulting in net working capital of $20.1 million. At December 31, 2017 we had total current assets of $24.3 million (including cash, cash equivalents and short-term investments and related interest receivable on short-term investments of $24.2 million) and current liabilities of $6.2 million, resulting in net working capital of $18.1 million.

We have substantial future capital requirements to continue our research and development activities and advance our product candidates through various development stages. The Company believes these expenditures are essential for the commercialization of its technologies.

Net cash used in operating activities for the first half of 2018 was $8.8 million. Our 2018 net loss of $12.7 million for the first half of 2018 included (i) $3.4 million in non-cash stock-based compensation expense and (ii) $0.5 million in a non-cash charge based on the change in the earn-out milestone liability.

Net cash provided by financing activities was $11.0 million during the first half of 2018 from $9.7 million in net proceeds from the Horizon Credit Facility and $1.3 million in net proceeds from the sale of our common stock through our ATM Facility with Cantor Fitzgerald.

We expect to seek additional capital through further public or private equity offerings, debt financing, additional strategic alliance and licensing arrangements, collaborative arrangements, or some combination of these financing alternatives. If we raise additional funds through the issuance of equity securities, the percentage ownership of our stockholders could be significantly diluted and the newly issued equity securities may have rights, preferences, or privileges senior to those of the holders of our common stock. If we raise funds through the issuance of debt securities, those securities may have rights, preferences, and privileges senior to those of our common stock. If we seek strategic alliances, licenses, or other alternative arrangements, such as arrangements with collaborative partners or others, we may need to relinquish rights to certain of our existing or future technologies, product candidates, or products we would otherwise seek to develop or commercialize on our own, or to license the rights to our technologies, product candidates, or products on terms that are not favorable to us. The overall status of the economic climate could also result in the terms of any equity offering, debt financing, or alliance, license, or other arrangement being even less favorable to us and our stockholders than if the overall economic climate were stronger. We also will continue to look for government sponsored research collaborations and grants to help offset future anticipated losses from operations and, to a lesser extent, interest income.

If adequate funds are not available through either the capital markets, strategic alliances, or collaborators, we may be required to delay or, reduce the scope of, or terminate our research, development, clinical programs, manufacturing, or commercialization efforts, or effect additional changes to our facilities or personnel, or obtain funds through other arrangements that may require us to relinquish some of our assets or rights to certain of our existing or future technologies, product candidates, or products on terms not favorable to us.

Off-Balance Sheet Arrangements and Contractual Obligations

We have no off-balance sheet financing arrangements. In July 2011, we entered into a lease with Brandywine Operating Partnership, L.P., a Delaware limited partnership for a 10,870 square foot premises located in Lawrenceville, New Jersey in connection with the relocation of our offices from Columbia, Maryland. In late 2015, Lenox Drive Office Park LLC, purchased the real estate and office building and assumed the lease. Under the current terms of the lease, which was amended effective May 1, 2017 and is set to expire on September 1, 2022, we reduced the size of the premises to 7,565 square feet and are paying a monthly rent that ranges from approximately $18,900 in the first year to approximately $20,500 in the final year of the amendment. We also have a one-time option to cancel the lease as of the 24th month after the commencement date of the amendment. In connection with the Asset Purchase Agreement, in June 2014, we assumed the existing lease with another landlord for an 11,500 square foot premises located in Huntsville, Alabama. In January 2018, we entered into a new 60-month lease agreement for 9,049 square feet with rent payments of approximately $18,100 per month. Other than this lease amendment, there were no material changes during the three and six months ended June 30, 2018 to our operating leases, which are disclosed in the contractual commitments table in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 filed on March 27, 2018 with the Securities and Exchange Commission.

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

The primary objective of our investment activities is to preserve our capital until it is required to fund operations while at the same time maximizing the income we receive from our investments without significantly increasing risk. Our cash flow and earnings are subject to fluctuations due to changes in interest rates in our investment portfolio. We maintain a portfolio of various issuers, types, and maturities. These securities are classified as available-for-sale and, consequently, are recorded on the condensed consolidated balance sheet at fair value with unrealized gains or losses reported as a component of accumulated other comprehensive loss included in stockholders' equity.

Item 4. CONTROLS AND PROCEDURES

We have carried out an evaluation, under the supervision and with the participation of management, including our principal executive officer and principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as that term is defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended. Based on that evaluation, our principal executive officer and principal financial officer have concluded that, as of June 30, 2018, which is the end of the period covered by this report, our disclosure controls and procedures are effective at the reasonable assurance level in alerting them in a timely manner to material information required to be included in our periodic reports with the Securities and Exchange Commission.

There were no changes in our internal controls over financial reporting identified in connection with the evaluation required by paragraph (d) of Rule 13a-15 of the Securities Exchange Act of 1934, as amended, that occurred during the three and six months ended June 30, 2018 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

Our management, including our chief executive officer and chief financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple errors or mistakes. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

PART II: OTHER INFORMATION

Item 1. Legal Proceedings

None.

Item 1A. Risk Factors

The following is a summary of the risk factors, uncertainties and assumptions that we believe are most relevant to our business. These are factors that, individually or in the aggregate, we think could cause our actual results to differ significantly from expected or historical results and our forward-looking statements. We note these factors for investors as permitted by Section 21E of the Securities Exchange Act of 1934, as amended and Section 27A of the Securities Act of 1933, as amended. Additional risks that we currently believe are immaterial may also impair our business operations. Investors should carefully consider the risks described below before making an investment decision and understand that it is not possible to predict or identify all such factors. Consequently, investors should not consider the following to be a complete discussion of all potential risks or uncertainties that may impact our business. Moreover, we operate in a competitive and rapidly changing environment. New factors emerge from time to time and it is not possible to predict the impact of all of these factors on our business, financial condition or results of operations. We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events, or otherwise. The description provided in this Item 1A includes any material changes to and supersedes the description of the risk factors associated with our business previously disclosed in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 filed on March 27, 2018 with the Securities and Exchange Commission (SEC). In assessing these risks, investors should also refer to the other information contained or incorporated by reference in this Quarterly Report and our other filings made from time to time with the SEC.

RISKS RELATED TO OUR BUSINESS

We have a history of significant losses from operations and expect to continue to incur significant losses for the foreseeable future.

Since our inception, our expenses have substantially exceeded our revenue, resulting in continuing losses and an accumulated deficit of $274 million at June 30, 2018. For the years ended December 31, 2016 and 2017, and for the six months ended June 30, 2018, we incurred a net loss of $22.1 million, $20.4 million and $12.7 million, respectively. We currently have no product revenue and do not expect to generate any product revenue for the foreseeable future. Because we are committed to continuing our product research, development, clinical trial and commercialization programs, we will continue to incur significant operating losses unless and until we complete the development of ThermoDox®, GEN-1 and other new product candidates and these product candidates have been clinically tested, approved by the United States Food and Drug Administration (FDA) and successfully marketed. The amount of future losses is uncertain. Our ability to achieve profitability, if ever, will depend on, among other things, us or our collaborators successfully developing product candidates, obtaining regulatory approvals to market and commercialize product candidates, manufacturing any approved products on commercially reasonable terms, establishing a sales and marketing organization or suitable third party alternatives for any approved product and raising sufficient funds to finance business activities. If we or our collaborators are unable to develop and commercialize one or more of our product candidates or if sales revenue from any product candidate that receives approval is insufficient, we will not achieve profitability, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Drug development is an inherently uncertain process with a high risk of failure at every stage of development. Our lead drug candidate failed to meet its primary endpoint in the Phase III HEAT Study.

On January 31, 2013, we announced that our lead product ThermoDox® in combination with radiofrequency ablation (RFA) failed to meet the primary endpoint of the Phase III clinical trial for primary liver cancer, known as the HEAT Study. We have not completed our final analysis of the data and do not know the extent to which, if any, the failure of ThermoDox® to meet its primary endpoint in the Phase III trial could impact our other ongoing studies of ThermoDox® including a pivotal, double-blind, placebo-controlled Phase III trial of ThermoDox® in combination with RFA in primary liver cancer, known as the OPTIMA Study, which we launched in the first half of 2014. The trial design of the OPTIMA Study is based on the overall survival data from the post-hoc analysis of results from the HEAT Study. ThermoDox® is also being evaluated in a Phase II clinical trial for recurrent chest wall breast cancer and other preclinical studies. In addition, we have initiated a Phase I dose-escalation clinical trial of GEN-1 in combination with the standard of care in neo-adjuvant ovarian cancer, known as the OVATION Study, and plan to expand our ovarian cancer development program to include a Phase I dose escalating trial evaluating GEN-1 , and plan to expand our ovarian cancer development program to include a Phase I/II dose escalating trial evaluating GEN-1, known as the OVATION II Study, in ovarian cancer patients.

Preclinical testing and clinical trials are long, expensive and highly uncertain processes and failure can unexpectedly occur at any stage of clinical development, as evidenced by the failure of ThermoDox® to meet its primary endpoint in the HEAT Study. Drug development is inherently risky and clinical trials take us several years to complete. The start or end of a clinical trial is often delayed or halted due to changing regulatory requirements, manufacturing challenges, required clinical trial administrative actions, slower than anticipated patient enrollment, changing standards of care, availability or prevalence of use of a comparator drug or required prior therapy, clinical outcomes including insufficient efficacy, safety concerns, or our own financial constraints. The results from preclinical testing or early clinical trials of a product candidate may not predict the results that will be obtained in later phase clinical trials of the product candidate. We, the FDA or other applicable regulatory authorities may suspend clinical trials of a product candidate at any time for various reasons, including a belief that subjects participating in such trials are being exposed to unacceptable health risks or adverse side effects. We may not have the financial resources to continue development of, or to enter into collaborations for, a product candidate if we experience any problems or other unforeseen events that delay or prevent regulatory approval of, or our ability to commercialize, product candidates. The failure of one or more of our drug candidates or development programs could have a material adverse effect on our business, financial condition and results of operations.

We will need to raise additional capital to fund our planned future operations, and we may be unable to secure such capital without dilutive financing transactions. If we are not able to raise additional capital, we may not be able to complete the development, testing and commercialization of our product candidates.

We have not generated significant revenue and have incurred significant net losses in each year since our inception. Since our inception, our expenses have substantially exceeded our revenue, resulting in continuing losses and an accumulated deficit of $274 million at June 30, 2018. For the years ended December 31, 2016 and 2017 and the six months ended June 30, 2018, we incurred a net loss of $22.1 million, $20.4 million and $12.7 million, respectively. As of June 30, 2018, we had approximately $26.3 million in cash and short-term investments including interest receivable.

We have substantial future capital requirements to continue our research and development activities and advance our product candidates through various development stages. For example, ThermoDox® is being evaluated in a Phase III clinical trial in combination with RFA for the treatment of primary liver cancer and other preclinical studies. We completed a Phase I dose-escalation clinical trial of GEN-1 in combination with the standard of care in neo-adjuvant ovarian cancer in the third quarter of 2017 and plan to expand our clinical development program for GEN-1 in ovarian cancer in 2018.

To complete the development and commercialization of our product candidates, we will need to raise substantial amounts of additional capital to fund our operations. Our future capital requirements will depend upon numerous unpredictable factors, including, without limitation, the cost, timing, progress and outcomes of clinical studies and regulatory reviews of our proprietary drug candidates, our efforts to implement new collaborations, licenses and strategic transactions, general and administrative expenses, capital expenditures and other unforeseen uses of cash. We do not have any committed sources of financing and cannot assure you that alternate funding will be available in a timely manner, on acceptable terms or at all. We may need to pursue dilutive equity financings, such as the issuance of shares of common stock, convertible debt or other convertible or exercisable securities. Such dilutive equity financings could dilute the percentage ownership of our current common stockholders and could significantly lower the market value of our common stock. In addition, a financing could result in the issuance of new securities that may have rights, preferences or privileges senior to those of our existing stockholders.

If we are unable to obtain additional capital on a timely basis or on acceptable terms, we may be required to delay, reduce or terminate our research and development programs and preclinical studies or clinical trials, if any, limit strategic opportunities or undergo corporate restructuring activities. We also could be required to seek funds through arrangements with collaborators or others that may require us to relinquish rights to some of our technologies, product candidates or potential markets or that could impose onerous financial or other terms. Furthermore, if we cannot fund our ongoing development and other operating requirements, particularly those associated with our obligations to conduct clinical trials under our licensing agreements, we will be in breach of these licensing agreements and could therefore lose our license rights, which could have material adverse effects on our business.

If we do not obtain or maintain FDA and foreign regulatory approvals for our drug candidates on a timely basis, or at all, or if the terms of any approval impose significant restrictions or limitations on use, we will be unable to sell those products and our business, results of operations and financial condition will be negatively affected.

To obtain regulatory approvals from the FDA and foreign regulatory agencies, we must conduct clinical trials demonstrating that our products are safe and effective. We may need to amend ongoing trials, or the FDA and/or foreign regulatory agencies may require us to perform additional trials beyond those we planned. The testing and approval process requires substantial time, effort and resources, and generally takes a number of years to complete. The time to complete testing and obtaining approvals is uncertain, and the FDA and foreign regulatory agencies have substantial discretion, at any phase of development, to terminate clinical studies, require additional clinical studies or other testing, delay or withhold approval, and mandate product withdrawals, including recalls. In addition, our drug candidates may have undesirable side effects or other unexpected characteristics that could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restricted label or the delay or denial of regulatory approval by regulatory authorities.

Even if we receive regulatory approval of a product, the approval may limit the indicated uses for which the drug may be marketed. The failure to obtain timely regulatory approval of product candidates, the imposition of marketing limitations, or a product withdrawal would negatively impact our business, results of operations and financial condition. Even if we receive approval, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to restrictions, withdrawal from the market, or penalties if we fail to comply with applicable regulatory requirements or if we experience unanticipated problems with our product candidates, when and if approved. Finally, even if we obtain FDA approval of any of our product candidates, we may never obtain approval or commercialize such products outside of the United States, given that we may be subject to additional or different regulatory burdens in other markets. This could limit our ability to realize their full market potential.

Our industry is highly regulated by the FDA and comparable foreign regulatory agencies. We must comply with extensive, strictly enforced regulatory requirements to develop, obtain, and maintain marketing approval for any of our product candidates.

Securing FDA or comparable foreign regulatory approval requires the submission of extensive preclinical and clinical data and supporting information for each therapeutic indication to establish the product candidate's safety and efficacy for its intended use. It takes years to complete the testing of a new drug or biological product and development delays and/or failure can occur at any stage of testing. Any of our present and future clinical trials may be delayed, halted, not authorized, or approval of any of our products may be delayed or may not be obtained due to any of the following:

- any preclinical test or clinical trial may fail to produce safety and efficacy results satisfactory to the FDA or comparable foreign regulatory authorities;
- preclinical and clinical data can be interpreted in different ways, which could delay, limit or prevent marketing approval;
- negative or inconclusive results from a preclinical test or clinical trial or adverse events during a clinical trial could cause a preclinical study or clinical trial to be repeated or a development program to be terminated, even if other studies relating to the development program are ongoing or have been completed and were successful;
- the FDA or comparable foreign regulatory authorities can place a clinical hold on a trial if, among other reasons, it finds that subjects enrolled in the trial are or would be exposed to an unreasonable and significant risk of illness or injury;
- the facilities that we utilize, or the processes or facilities of third party vendors, including without limitation the contract manufacturers who will be manufacturing drug substance and drug product for us or any potential collaborators, may not satisfactorily complete inspections by the FDA or comparable foreign regulatory authorities; and
- we may encounter delays or rejections based on changes in FDA policies or the policies of comparable foreign regulatory authorities during the period in which we develop a product candidate, or the period required for review of any final marketing approval before we are able to market any product candidate.

In addition, information generated during the clinical trial process is susceptible to varying interpretations that could delay, limit, or prevent marketing approval at any stage of the approval process. Moreover, early positive preclinical or clinical trial results may not be replicated in later clinical trials. As more product candidates within a particular class of drugs proceed through clinical development to regulatory review and approval, the amount and type of clinical data that may be required by regulatory authorities may increase or change. Failure to demonstrate adequately the quality, safety, and efficacy of any of our product candidates would delay or prevent marketing approval of the applicable product candidate. We cannot assure you that if clinical trials are completed, either we or our potential collaborators will submit applications for required authorizations to manufacture or market potential products or that any such application will be reviewed and approved by appropriate regulatory authorities in a timely manner, if at all.

New gene-based products for therapeutic applications are subject to extensive regulation by the FDA and comparable agencies in other countries. The precise regulatory requirements with which we will have to comply, now and in the future, are uncertain due to the novelty of the gene-based products we are developing.

The regulatory approval process for novel product candidates such as ours can be significantly more expensive and take longer than for other, better known or more extensively studied product candidates. Limited data exist regarding the safety and efficacy of DNA-based therapeutics compared with conventional therapeutics, and government regulation of DNA-based therapeutics is evolving. Regulatory requirements governing gene and cell therapy products have changed frequently and may continue to change in the future. The FDA has established the Office of Cellular, Tissue and Gene Therapies within its Center for Biologics Evaluation and Research (CBER), to consolidate the review of gene therapy and related products, and has established the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER in its review. It is difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our product candidates in either the U.S. or the European Union or how long it will take to commercialize our product candidates.

Adverse events or the perception of adverse events in the field of gene therapy generally, or with respect to our product candidates specifically, may have a particularly negative impact on public perception of gene therapy and result in greater governmental regulation, including future bans or stricter standards imposed on gene-based therapy clinical trials, stricter labeling requirements and other regulatory delays in the testing or approval of our potential products. For example, if we were to engage an NIH-funded institution to conduct a clinical trial, we may be subject to review by the NIH Office of Biotechnology Activities' Recombinant DNA Advisory Committee (the RAC). If undertaken, RAC can delay the initiation of a clinical trial, even if the FDA has reviewed the trial design and details and approved its initiation. Conversely, the FDA can put an investigational new drug (IND) application on a clinical hold even if the RAC has provided a favorable review or an exemption from in-depth, public review. Such committee and advisory group reviews and any new guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. Any increased scrutiny could delay or increase the costs of our product development efforts or clinical trials.

Even if our products receive regulatory approval, they may still face future development and regulatory difficulties. Government regulators may impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. This governmental oversight may be particularly strict with respect to gene-based therapies.

Serious adverse events, undesirable side effects or other unexpected properties of our product candidates may be identified during development or after approval, which could lead to the discontinuation of our clinical development programs, refusal by regulatory authorities to approve our product candidates or, if discovered following marketing approval, revocation of marketing authorizations or limitations on the use of our product candidates thereby limiting the commercial potential of such product candidate.

As we continue our development of our product candidates and initiate clinical trials of our additional product candidates, serious adverse events, undesirable side effects or unexpected characteristics may emerge causing us to abandon these product candidates or limit their development to more narrow uses or subpopulations in which the serious adverse events, undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective.

Even if our product candidates initially show promise in these early clinical trials, the side effects of drugs are frequently only detectable after they are tested in large, Phase III clinical trials or, in some cases, after they are made available to patients on a commercial scale after approval. Sometimes, it can be difficult to determine if the serious adverse or unexpected side effects were caused by the product candidate or another factor, especially in oncology subjects who may suffer from other medical conditions and be taking other medications. If serious adverse or unexpected side effects are identified during development and are determined to be attributed to our product candidate, we may be required to develop a Risk Evaluation and Mitigation Strategy (REMS) to mitigate those serious safety risks, which could impose significant distribution and use restrictions on our products.

In addition, drug-related side effects could also affect subject recruitment or the ability of enrolled subjects to complete the trial, result in potential product liability claims, reputational harm, withdrawal of approvals, a requirement to include additional warnings on the label or to create a medication guide outlining the risks of such side effects for distribution to patients. It can also result in patient harm, liability lawsuits, and reputational harm. Any of these occurrences could prevent us from achieving or maintaining market acceptance and may harm our business, financial condition and prospects significantly.

We do not expect to generate revenue for the foreseeable future.

We have devoted our resources to developing a new generation of products and will not be able to market these products until we have completed clinical trials and obtain all necessary governmental approvals. Our lead product candidate, ThermoDox® and the product candidates we purchased in our acquisition of EGEN, Inc., including GEN-1, are still in various stages of development and trials and cannot be marketed until we have completed clinical testing and obtained necessary governmental approval. Following our announcement on January 31, 2013 that the HEAT Study failed to meet its primary endpoint of progression free survival, we continued to follow the patients enrolled in the HEAT Study to the secondary endpoint, overall survival. Based on the overall survival data from the post-hoc analysis of results from the HEAT Study, we launched a pivotal, double-blind, placebo-controlled Phase III trial of ThermoDox® in combination with RFA in primary liver cancer, known as the OPTIMA Study, in 2014. ThermoDox® is currently also being evaluated in a Phase II clinical trial for the treatment of recurrent chest wall breast cancer, known as the DIGNITY Study, and other preclinical studies. GEN-1 is currently in an early stage of clinical development for the treatment of ovarian cancer. We conducted a Phase I dose-escalation clinical trial of GEN-1 in combination with the standard of care in neo-adjuvant ovarian cancer starting in the second half of 2015 and plan to expand our ovarian cancer development program to include a Phase I dose escalating trial evaluating GEN-1 in ovarian cancer patients and additional trials in newly diagnosed ovarian cancer patients. The delivery technology platforms, TheraPlas and TheraSilence, are in preclinical stages of development. Accordingly, our revenue sources are, and will remain, extremely limited until our product candidates are clinically tested, approved by the FDA or foreign regulatory agencies and successfully marketed. We cannot guarantee that any of our product candidates will be approved by the FDA or any foreign regulatory agency or marketed, successfully or otherwise, at any time in the foreseeable future or at all.

We may not successfully engage in future strategic transactions, which could adversely affect our ability to develop and commercialize product candidates, impact our cash position, and increase our expense and present significant distractions to our management.

In the future, we may consider strategic alternatives intended to further the development of our business, which may include acquiring businesses, technologies or products, out- or in-licensing product candidates or technologies or entering into a business combination with another company. Any strategic transaction may require us to incur non-recurring or other charges, increase our near- and long-term expenditures and pose significant integration or implementation challenges or disrupt our management or business. These transactions would entail numerous operational and financial risks, including exposure to unknown liabilities, disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired products, product candidates or technologies, incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs, higher than expected collaboration, acquisition or integration costs, write-downs of assets or goodwill or impairment charges, increased amortization expenses, difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business, impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership and the inability to retain key employees of any acquired business. Accordingly, although there can be no assurance that we will undertake or successfully complete any transactions of the nature described above, any transactions that we do complete may be subject to the foregoing or other risks and have a material adverse effect on our business, results of operations, financial condition and prospects. Conversely, any failure to enter any strategic transaction that would be beneficial to us could delay the development and potential commercialization of our product candidates and have a negative impact on the competitiveness of any product candidate that reaches market.

Strategic transactions, such as acquisitions, partnerships and collaborations, including the EGEN acquisition, involve numerous risks, including:

- the failure of markets for the products of acquired businesses, technologies or product lines to develop as expected;
- uncertainties in identifying and pursuing acquisition targets;
- the challenges in achieving strategic objectives, cost savings and other benefits expected from acquisitions;
- the risk that the financial returns on acquisitions will not support the expenditures incurred to acquire such businesses or the capital expenditures needed to develop such businesses;
- difficulties in assimilating the acquired businesses, technologies or product lines;
- the failure to successfully manage additional business locations, including the additional infrastructure and resources necessary to support and integrate such locations;

- the existence of unknown product defects related to acquired businesses, technologies or product lines that may not be identified due to the inherent limitations involved in the due diligence process of an acquisition;
- the diversion of management's attention from other business concerns;
- risks associated with entering markets or conducting operations with which we have no or limited direct prior experience;
- risks associated with assuming the legal obligations of acquired businesses, technologies or product lines;
- risks related to the effect that internal control processes of acquired businesses might have on our financial reporting and management's report on our internal control over financial reporting;
- the potential loss of key employees related to acquired businesses, technologies or product lines; and
- the incurrence of significant exit charges if products or technologies acquired in business combinations are unsuccessful.

We may never realize the perceived benefits of the EGEN acquisition or potential future transactions. We cannot assure you that we will be successful in overcoming problems encountered in connection with any transactions, and our inability to do so could significantly harm our business, results of operations and financial condition. These transactions could dilute a stockholder's investment in us and cause us to incur debt, contingent liabilities and amortization/impairment charges related to intangible assets, all of which could materially and adversely affect our business, results of operations and financial condition. In addition, our effective tax rate for future periods could be negatively impacted by the EGEN acquisition or potential future transactions.

Our business depends on license agreements with third parties to permit us to use patented technologies. The loss of any of our rights under these agreements could impair our ability to develop and market our products.

Our success will depend, in a substantial part, on our ability to maintain our rights under license agreements granting us rights to use patented technologies. For instance, we are party to license agreements with Duke University, under which we have exclusive rights to commercialize medical treatment products and procedures based on Duke's thermo-sensitive liposome technology. The Duke University license agreement contains a license fee, royalty and/or research support provisions, testing and regulatory milestones, and other performance requirements that we must meet by certain deadlines. If we breach any provisions of the license and research agreements, we may lose our ability to use the subject technology, as well as compensation for our efforts in developing or exploiting the technology. Any such loss of rights and access to technology could have a material adverse effect on our business.

Further, we cannot guarantee that any patent or other technology rights licensed to us by others will not be challenged or circumvented successfully by third parties, or that the rights granted will provide adequate protection. We may be required to alter any of our potential products or processes, or enter into a license and pay licensing fees to a third party or cease certain activities. There can be no assurance that we can obtain a license to any technology that we determine we need on reasonable terms, if at all, or that we could develop or otherwise obtain alternate technology. If a license is not available on commercially reasonable terms or at all, our business, results of operations, and financial condition could be significantly harmed, and we may be prevented from developing and commercializing the product. Litigation, which could result in substantial costs, may also be necessary to enforce any patents issued to or licensed by us or to determine the scope and validity of others claimed proprietary rights.

If any of our pending patent applications do not issue, or are deemed invalid following issuance, we may lose valuable intellectual property protection.

The patent positions of pharmaceutical and biotechnology companies, such as ours, are uncertain and involve complex legal and factual issues. We own various U.S. and international patents and have pending U.S. and international patent applications that cover various aspects of our technologies. There can be no assurance that patents that have been issued will be held valid and enforceable in a court of law through the entire patent term. Even for patents that are held valid and enforceable, the legal process associated with obtaining such a judgment is time consuming and costly. Additionally, issued patents can be subject to opposition, interferences or other proceedings that can result in the revocation of the patent or maintenance of the patent in amended form (and potentially in a form that renders the patent without commercially relevant or broad coverage). Further, our competitors may be able to circumvent and otherwise design around our patents. Even if a patent is issued and enforceable, because development and commercialization of pharmaceutical products can be subject to substantial delays, patents may expire early and provide only a short period of protection, if any, following the commercialization of products encompassed by our patents. We may have to participate in interference proceedings declared by the U.S. Patent and Trademark Office, which could result in a loss of the patent and/or substantial cost to us.

We have filed patent applications, and plan to file additional patent applications, covering various aspects of our technologies and our proprietary product candidates. There can be no assurance that the patent applications for which we apply would actually issue as patents or do so with commercially relevant or broad coverage. The coverage claimed in a patent application can be significantly reduced before the patent is issued. The scope of our claim coverage can be critical to our ability to enter into licensing transactions with third parties and our right to receive royalties from our collaboration partnerships. Since publication of discoveries in scientific or patent literature often lags behind the date of such discoveries, we cannot be certain that we were the first inventor of inventions covered by our patents or patent applications. In addition, there is no guarantee that we will be the first to file a patent application directed to an invention.

An adverse outcome in any judicial proceeding involving intellectual property, including patents, could subject us to significant liabilities to third parties, require disputed rights to be licensed from or to third parties or require us to cease using the technology in dispute. In those instances where we seek an intellectual property license from another, we may not be able to obtain the license on a commercially reasonable basis, if at all, thereby raising concerns on our ability to freely commercialize our technologies or products.

We rely on trade secret protection and other unpatented proprietary rights for important proprietary technologies, and any loss of such rights could harm our business, results of operations and financial condition.

We rely on trade secrets and confidential information that we seek to protect, in part, by confidentiality agreements with our corporate partners, collaborators, employees and consultants. We cannot assure you that these agreements are adequate to protect our trade secrets and confidential information or will not be breached or, if breached, we will have adequate remedies. Furthermore, others may independently develop substantially equivalent confidential and proprietary information or otherwise gain access to our trade secrets or disclose such technology. Any loss of trade secret protection or other unpatented proprietary rights could harm our business, results of operations and financial condition.

Our products may infringe patent rights of others, which may require costly litigation and, if we are not successful, could cause us to pay substantial damages or limit our ability to commercialize our products.

Our commercial success depends on our ability to operate without infringing the patents and other proprietary rights of third parties. There may be third party patents that relate to our products and technology. We may unintentionally infringe upon valid patent rights of third parties. Although we currently are not involved in any material litigation involving patents, a third party patent holder may assert a claim of patent infringement against us in the future. Alternatively, we may initiate litigation against the third party patent holder to request that a court declare that we are not infringing the third party's patent and/or that the third party's patent is invalid or unenforceable. If a claim of infringement is asserted against us and is successful, and therefore we are found to infringe, we could be required to pay damages for infringement, including treble damages if it is determined that we knew or became aware of such a patent and we failed to exercise due care in determining whether or not we infringed the patent. If we have supplied infringing products to third parties or have licensed third parties to manufacture, use or market infringing products, we may be obligated to indemnify these third parties for damages they may be required to pay to the patent holder and for any losses they may sustain.

We can also be prevented from selling or commercializing any of our products that use the infringing technology in the future, unless we obtain a license from such third party. A license may not be available from such third party on commercially reasonable terms or may not be available at all. Any modification to include a non-infringing technology may not be possible or if possible may be difficult or time-consuming to develop, and require revalidation, which could delay our ability to commercialize our products. Any infringement action asserted against us, even if we are ultimately successful in defending against such action, would likely delay the regulatory approval process of our products, harm our competitive position, be expensive and require the time and attention of our key management and technical personnel.

We rely on third parties to conduct all of our clinical trials. If these third parties are unable to carry out their contractual duties in a manner that is consistent with our expectations, comply with budgets and other financial obligations or meet expected deadlines, we may not receive certain development milestone payments or be able to obtain regulatory approval for or commercialize our product candidates in a timely or cost-effective manner.

We do not independently conduct clinical trials for our drug candidates. We rely, and expect to continue to rely, on third-party clinical investigators, clinical research organizations (CROs), clinical data management organizations and consultants to design, conduct, supervise and monitor our clinical trials.

Because we do not conduct our own clinical trials, we must rely on the efforts of others and have reduced control over aspects of these activities, including, the timing of such trials, the costs associated with such trials and the procedures that are followed for such trials. We do not expect to significantly increase our personnel in the foreseeable future and may continue to rely on third parties to conduct all of our future clinical trials. If we cannot contract with acceptable third parties on commercially reasonable terms or at all, if these third parties are unable to carry out their contractual duties or obligations in a manner that is consistent with our expectations or meet expected deadlines, if they do not carry out the trials in accordance with budgeted amounts, if the quality or accuracy of the clinical data they obtain is compromised due to their failure to adhere to our clinical protocols or for other reasons, or if they fail to maintain compliance with applicable government regulations and standards, our clinical trials may be extended, delayed or terminated or may become significantly more expensive, we may not receive development milestone payments when expected or at all, and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates.

Despite our reliance on third parties to conduct our clinical trials, we are ultimately responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires clinical trials to be conducted in accordance with good clinical practices for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical trial participants are protected. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ***ClinicalTrials.gov***, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions. Our reliance on third parties that we do not control does not relieve us of these responsibilities and requirements. If we or a third party we rely on fails to meet these requirements, we may not be able to obtain, or may be delayed in obtaining, marketing authorizations for our drug candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our drug candidates. This could have a material adverse effect on our business, financial condition, results of operations and prospects.

Because we rely on third party manufacturing and supply partners, our supply of research and development, preclinical and clinical development materials may become limited or interrupted or may not be of satisfactory quantity or quality.

We rely on third party supply and manufacturing partners to supply the materials and components for, and manufacture, our research and development, preclinical and clinical trial drug supplies. We do not own manufacturing facilities or supply sources for such components and materials. There can be no assurance that our supply of research and development, preclinical and clinical development drugs and other materials will not be limited, interrupted, restricted in certain geographic regions or of satisfactory quality or continue to be available at acceptable prices. Suppliers and manufacturers must meet applicable manufacturing requirements and undergo rigorous facility and process validation tests required by FDA and foreign regulatory authorities in order to comply with regulatory standards, such as current Good Manufacturing Practices. In the event that any of our suppliers or manufacturers fails to comply with such requirements or to perform its obligations to us in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves, for which we currently do not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do on reasonable terms, if at all.

Our business is subject to numerous and evolving state, federal and foreign regulations and we may not be able to secure the government approvals needed to develop and market our products.

Our research and development activities, pre-clinical tests and clinical trials, and ultimately the manufacturing, marketing and labeling of our products, are all subject to extensive regulation by the FDA and foreign regulatory agencies. Pre-clinical testing and clinical trial requirements and the regulatory approval process typically take years and require the expenditure of substantial resources. Additional government regulation may be established that could prevent or delay regulatory approval of our product candidates. Delays or rejections in obtaining regulatory approvals would adversely affect our ability to commercialize any product candidates and our ability to generate product revenue or royalties.

The FDA and foreign regulatory agencies require that the safety and efficacy of product candidates be supported through adequate and well-controlled clinical trials. If the results of pivotal clinical trials do not establish the safety and efficacy of our product candidates to the satisfaction of the FDA and other foreign regulatory agencies, we will not receive the approvals necessary to market such product candidates. Even if regulatory approval of a product candidate is granted, the approval may include significant limitations on the indicated uses for which the product may be marketed.

We are subject to the periodic inspection of our clinical trials, facilities, procedures and operations and/or the testing of our products by the FDA to determine whether our systems and processes, or those of our vendors and suppliers, are in compliance with FDA regulations. Following such inspections, the FDA may issue notices on Form 483 and warning letters that could cause us to modify certain activities identified during the inspection.

Failure to comply with the FDA and other governmental regulations can result in fines, unanticipated compliance expenditures, recall or seizure of products, total or partial suspension of production and/or distribution, suspension of the FDA's review of product applications, enforcement actions, injunctions and criminal prosecution. Under certain circumstances, the FDA also has the authority to revoke previously granted product approvals. Although we have internal compliance programs, if these programs do not meet regulatory agency standards or if our compliance is deemed deficient in any significant way, it could have a material adverse effect on the Company.

We are also subject to recordkeeping and reporting regulations. These regulations require, among other things, the reporting to the FDA of adverse events alleged to have been associated with the use of a product or in connection with certain product failures.

Labeling and promotional activities also are regulated by the FDA. We must also comply with record keeping requirements as well as requirements to report certain adverse events involving our products. The FDA can impose other post-marketing controls on us as well as our products including, but not limited to, restrictions on sale and use, through the approval process, regulations and otherwise.

Many states in which we do or may do business, or in which our products may be sold, if at all, impose licensing, labeling or certification requirements that are in addition to those imposed by the FDA. There can be no assurance that one or more states will not impose regulations or requirements that have a material adverse effect on our ability to sell our products.

In many of the foreign countries in which we may do business or in which our products may be sold, we will be subject to regulation by national governments and supranational agencies as well as by local agencies affecting, among other things, product standards, packaging requirements, labeling requirements, import restrictions, tariff regulations, duties and tax requirements. There can be no assurance that one or more countries or agencies will not impose regulations or requirements that could have a material adverse effect on our ability to sell our products.

We have obtained Orphan Drug Designation for ThermoDox® and may seek Orphan Drug Designation for other product candidates, but we may be unsuccessful or may be unable to maintain the benefits associated with Orphan Drug Designation, including the potential for market exclusivity.

ThermoDox® has been granted orphan drug designation for primary liver cancer in both the U.S. and Europe. As part of our business strategy, we may seek Orphan Drug Designation for other product candidates, and we may be unsuccessful. Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States.

Even if we obtain Orphan Drug Designation for our product candidates in specific indications, we may not be the first to obtain marketing approval of these product candidates for the orphan-designated indication due to the uncertainties associated with developing pharmaceutical products. In addition, exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan-designated indication or may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition. Further, even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs with different active moieties can be approved for the same condition. Even after an orphan product is approved, the FDA can subsequently approve the same drug with the same active moiety for the same condition if the FDA concludes that the later drug is safer, more effective or makes a major contribution to patient care. Orphan Drug Designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process. In addition, while we may seek Orphan Drug Designation for our product candidates, we may never receive such designations.

Fast Track designation may not actually lead to a faster development or regulatory review or approval process.

ThermoDox® has received U.S. FDA Fast Track Designation. However, we may not experience a faster development process, review, or approval compared to conventional FDA procedures. The FDA may withdraw our Fast Track designation if the FDA believes that the designation is no longer supported by data from our clinical or pivotal development program. Our Fast Track designation does not guarantee that we will qualify for or be able to take advantage of the FDA's expedited review procedures or that any application that we may submit to the FDA for regulatory approval will be accepted for filing or ultimately approved.

Legislative and regulatory changes affecting the healthcare industry could adversely affect our business.

Political, economic and regulatory influences are subjecting the healthcare industry to potential fundamental changes that could substantially affect our results of operations. There have been a number of government and private sector initiatives during the last few years to limit the growth of healthcare costs, including price regulation, competitive pricing, coverage and payment policies, comparative effectiveness of therapies, technology assessments and managed-care arrangements. For example, the Affordable Care Act, passed in 2010, enacted a number of reforms to expand access to health insurance while also reducing or constraining the growth of healthcare spending, enhancing remedies against fraud and abuse, adding new transparency requirements for healthcare industries, and imposing new taxes on fees on healthcare industry participants, among other policy reforms. Further, the 2016 Presidential and Congressional elections and subsequent developments have caused the future state of many core aspects of the current health care marketplace to be uncertain, as the new Presidential Administration and Congress have repeatedly expressed a desire to repeal all or portions of the Affordable Care Act. It is uncertain whether or when any legislative proposals will be adopted or what actions federal, state, or private payors for health care treatment and services may take in response to any healthcare reform proposals or legislation. We cannot predict the effect healthcare reforms may have on our business and we can offer no assurances that any of these reforms will not have a material adverse effect on our business. In addition, uncertainty remains regarding proposed significant reforms to the U.S. health care system.

The success of our products may be harmed if the government, private health insurers and other third-party payers do not provide sufficient coverage or reimbursement.

Our ability to commercialize our new cancer treatment systems successfully will depend in part on the extent to which reimbursement for the costs of such products and related treatments will be available from government health administration authorities, private health insurers and other third-party payors. The reimbursement status of newly approved medical products is subject to significant uncertainty. We cannot guarantee that adequate third-party insurance coverage will be available for us to establish and maintain price levels sufficient for us to realize an appropriate return on our investment in developing new therapies. Government, private health insurers and other third-party payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement for new therapeutic products approved for marketing by the FDA. For example, Congress passed the Affordable Care Act in 2010 which enacted a number of reforms to expand access to health insurance while also reducing or constraining the growth of healthcare spending, enhancing remedies against fraud and abuse, adding new transparency requirements for healthcare industries, and imposing new taxes on fees on healthcare industry participants, among other policy reforms. Federal agencies, Congress and state legislatures have continued to show interest in implementing cost containment programs to limit the growth of health care costs, including price controls, restrictions on reimbursement and other fundamental changes to the healthcare delivery system. In addition, in recent years, Congress has enacted various laws seeking to reduce the federal debt level and contain healthcare expenditures, and the Medicare and other healthcare programs are frequently identified as potential targets for spending cuts. New government legislation or regulations related to pricing or other fundamental changes to the healthcare delivery system as well as a government or third-party payer decision not to approve pricing for, or provide adequate coverage or reimbursement of, our product candidates hold the potential to severely limit market opportunities of such products. Accordingly, even if coverage and reimbursement are provided by government, private health insurers and third-party payors for uses of our products, market acceptance of these products would be adversely affected if the reimbursement available proves to be unprofitable for health care providers.

Our products may not achieve sufficient acceptance by the medical community to sustain our business.

The commercial success of our products will depend upon their acceptance by the medical community and third-party payors as clinically useful, cost effective and safe. Any of our drug candidates or similar product candidates being investigated by our competitors may prove not to be effective in trial or in practice, cause adverse events or other undesirable side effects. Our testing and clinical practice may not confirm the safety and efficacy of our product candidates or even if further testing and clinical practice produce positive results, the medical community may not view these new forms of treatment as effective and desirable or our efforts to market our new products may fail. Market acceptance depends upon physicians and hospitals obtaining adequate reimbursement rates from third-party payors to make our products commercially viable. Any of these factors could have an adverse effect on our business, financial condition and results of operations.

The commercial potential of a drug candidate in development is difficult to predict. If the market size for a new drug is significantly smaller than we anticipate, it could significantly and negatively impact our revenue, results of operations and financial condition.

It is very difficult to predict the commercial potential of product candidates due to important factors such as safety and efficacy compared to other available treatments, including potential generic drug alternatives with similar efficacy profiles, changing standards of care, third party payor reimbursement standards, patient and physician preferences, the availability of competitive alternatives that may emerge either during the long drug development process or after commercial introduction, and the availability of generic versions of our successful product candidates following approval by government health authorities based on the expiration of regulatory exclusivity or our inability to prevent generic versions from coming to market by asserting our patents. If due to one or more of these risks the market potential for a drug candidate is lower than we anticipated, it could significantly and negatively impact the revenue potential for such drug candidate and would adversely affect our business, financial condition and results of operations.

Several of our current clinical trials are being conducted outside the United States, and the FDA may not accept data from trials conducted in foreign locations.

Several of our current clinical trials are being conducted outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of these data is subject to certain conditions imposed by the FDA. For example, the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with ethical principles. The trial population must also adequately represent the U.S. population, and the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful. In general, the patient population for any clinical trials conducted outside of the United States must be representative of the population for whom we intend to label the product in the United States. In addition, while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will be dependent upon its determination that the trials also complied with all applicable U.S. laws and regulations. We cannot assure you that the FDA will accept data from trials conducted outside of the United States. If the FDA does not accept the data from such clinical trials, it would likely result in the need for additional trials, which would be costly and time-consuming and delay or permanently halt our development of our product candidates.

We have no internal sales or marketing capability. If we are unable to create sales, marketing and distribution capabilities or enter into alliances with others possessing such capabilities to perform these functions, we will not be able to commercialize our products successfully.

We currently have no sales, marketing or distribution capabilities. We intend to market our products, if and when such products are approved for commercialization by the FDA and foreign regulatory agencies, either directly or through other strategic alliances and distribution arrangements with third parties. If we decide to market our products directly, we will need to commit significant financial and managerial resources to develop a marketing and sales force with technical expertise and with supporting distribution, administration and compliance capabilities. If we rely on third parties with such capabilities to market our products, we will need to establish and maintain partnership arrangements, and there can be no assurance that we will be able to enter into third-party marketing or distribution arrangements on acceptable terms or at all. To the extent that we do enter into such arrangements, we will be dependent on our marketing and distribution partners. In entering into third-party marketing or distribution arrangements, we expect to incur significant additional expenses and there can be no assurance that such third parties will establish adequate sales and distribution capabilities or be successful in gaining market acceptance for our products and services.

Technologies for the treatment of cancer are subject to rapid change, and the development of treatment strategies that are more effective than our technologies could render our technologies obsolete.

Various methods for treating cancer currently are, and in the future are expected to be, the subject of extensive research and development. Many possible treatments that are being researched, if successfully developed, may not require, or may supplant, the use of our technologies. The successful development and acceptance of any one or more of these alternative forms of treatment could render our technology obsolete as a cancer treatment method.

We may not be able to hire or retain key officers or employees that we need to implement our business strategy and develop our product candidates and business, including those purchased in the EGEN acquisition.

Our success depends significantly on the continued contributions of our executive officers, scientific and technical personnel and consultants, including those retained in the EGEN acquisition, and on our ability to attract additional personnel as we seek to implement our business strategy and develop our product candidates and businesses. Our operations associated with the EGEN acquisition are located in Huntsville, Alabama. Key employees may depart if we fail to successfully manage this additional business location or in relation to any uncertainties or difficulties of integration with Celsion. We cannot guarantee that we will retain key employees to the same extent that we and EGEN retained each of our own employees in the past, which could have a negative impact on our business, results of operations and financial condition. Our integration of EGEN and ability to operate in the fields we acquired from EGEN may be more difficult if we lose key employees. Additionally, during our operating history, we have assigned many essential responsibilities to a relatively small number of individuals. However, as our business and the demands on our key employees expand, we have been, and will continue to be, required to recruit additional qualified employees. The competition for such qualified personnel is intense, and the loss of services of certain key personnel or our inability to attract additional personnel to fill critical positions could adversely affect our business. Further, we do not carry “key man” insurance on any of our personnel. Therefore, loss of the services of key personnel would not be ameliorated by the receipt of the proceeds from such insurance.

Our success will depend in part on our ability to grow and diversify, which in turn will require that we manage and control our growth effectively.

Our business strategy contemplates growth and diversification. Our ability to manage growth effectively will require that we continue to expend funds to improve our operational, financial and management controls, reporting systems and procedures. In addition, we must effectively expand, train and manage our employees. We will be unable to manage our business effectively if we are unable to alleviate the strain on resources caused by growth in a timely and successful manner. There can be no assurance that we will be able to manage our growth and a failure to do so could have a material adverse effect on our business.

We face intense competition and the failure to compete effectively could adversely affect our ability to develop and market our products.

There are many companies and other institutions engaged in research and development of various technologies for cancer treatment products that seek treatment outcomes similar to those that we are pursuing. We believe that the level of interest by others in investigating the potential of possible competitive treatments and alternative technologies will continue and may increase. Potential competitors engaged in all areas of cancer treatment research in the United States and other countries include, among others, major pharmaceutical, specialized technology companies, and universities and other research institutions. Most of our current and potential competitors have substantially greater financial, technical, human and other resources, and may also have far greater experience than do we, both in pre-clinical testing and human clinical trials of new products and in obtaining FDA and other regulatory approvals. One or more of these companies or institutions could succeed in developing products or other technologies that are more effective than the products and technologies that we have been or are developing, or which would render our technology and products obsolete and non-competitive. Furthermore, if we are permitted to commence commercial sales of any of our products, we will also be competing, with respect to manufacturing efficiency and marketing, with companies having substantially greater resources and experience in these areas.

We may be subject to significant product liability claims and litigation.

Our business exposes us to potential product liability risks inherent in the testing, manufacturing and marketing of human therapeutic products. We presently have product liability insurance limited to $10 million per incident and $10 million annually. If we were to be subject to a claim in excess of this coverage or to a claim not covered by our insurance and the claim succeeded, we would be required to pay the claim with our own limited resources, which could have a severe adverse effect on our business. Whether or not we are ultimately successful in any product liability litigation, such litigation would harm the business by diverting the attention and resources of our management, consuming substantial amounts of our financial resources and by damaging our reputation. Additionally, we may not be able to maintain our product liability insurance at an acceptable cost, if at all.

Our employees, clinical trial investigators, CROs, consultants, vendors and any potential commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, clinical trial investigators, CROs, consultants, vendors and any potential commercial partners. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates: (i) FDA laws and regulations or those of comparable foreign regulatory authorities, including those laws that require the reporting of true, complete and accurate information, (ii) manufacturing standards, (iii) federal and state health and data privacy, security, fraud and abuse, government price reporting, transparency reporting requirements, and other healthcare laws and regulations in the United States and abroad, or (iv) laws that require the true, complete and accurate reporting of financial information or data. Such misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation.

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

Despite the implementation of security measures, our internal computer systems and those of our CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Such events could cause interruptions of our operations. For instance, the loss of preclinical data or data from any clinical trial involving our product candidates could result in delays in our development and regulatory filing efforts and significantly increase our costs. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data, or inappropriate disclosure of confidential or proprietary information, we could be subject to reputational harm, monetary fines, civil suits, civil penalties or criminal sanctions and requirements to disclose the breach, and other forms of liability and the development of our product candidates could be delayed.

RISKS RELATED TO OUR SECURITIES

The market price of our common stock has been, and may continue to be volatile and fluctuate significantly, which could result in substantial losses for investors and subject us to securities class action litigation.

The trading price for our common stock has been, and we expect it to continue to be, volatile. Our January 31, 2013 announcement that the HEAT Study failed to meet its primary endpoint has resulted in significant volatility and a steep decline in the price of our common stock, a level of decline that could result in securities litigation. The price at which our common stock trades depends upon a number of factors, including our historical and anticipated operating results, our financial situation, announcements of technological innovations or new products by us or our competitors, our ability or inability to raise the additional capital we may need and the terms on which we raise it, and general market and economic conditions. Some of these factors are beyond our control. Broad market fluctuations may lower the market price of our common stock and affect the volume of trading in our stock, regardless of our financial condition, results of operations, business or prospect. The closing price of our common stock as reported on The NASDAQ Capital Market had a high price of $27.02 and a low price of $4.20 in the 52-week period ended December 31, 2016, a high price of $7.14 and a low price of $1.28 in the 52-week period ended December 31, 2017, and a high price of $1.99 and a low price of $3.32 from January 1, 2018 through August 13, 2018. Among the factors that may cause the market price of our common stock to fluctuate are the risks described in

- results of preclinical and clinical studies of our product candidates or those of our competitors;
- regulatory or legal developments in the U.S. and other countries, especially changes in laws and regulations applicable to our product candidates;
- actions taken by regulatory agencies with respect to our product candidates, clinical studies, manufacturing process or sales and marketing terms;
- introductions and announcements of new products by us or our competitors, and the timing of these introductions or announcements;
- announcements by us or our competitors of significant acquisitions or other strategic transactions or capital commitments;
- fluctuations in our quarterly operating results or the operating results of our competitors;
- variance in our financial performance from the expectations of investors;
- changes in the estimation of the future size and growth rate of our markets;
- changes in accounting principles or changes in interpretations of existing principles, which could affect our financial results;
- failure of our products to achieve or maintain market acceptance or commercial success;
- conditions and trends in the markets we serve;
- changes in general economic, industry and market conditions;
- success of competitive products and services;
- changes in market valuations or earnings of our competitors;
- changes in our pricing policies or the pricing policies of our competitors;
- changes in legislation or regulatory policies, practices or actions;
- the commencement or outcome of litigation involving our company, our general industry or both;
- recruitment or departure of key personnel;
- changes in our capital structure, such as future issuances of securities or the incurrence of additional debt;
- actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;
- actual or expected sales of our common stock by our stockholders;
- acquisitions and financings, including the EGEN acquisition; and
- the trading volume of our common stock.

In addition, the stock markets, in general, The NASDAQ Capital Market and the market for pharmaceutical companies in particular, may experience a loss of investor confidence. Such loss of investor confidence may result in extreme price and volume fluctuations in our common stock that are unrelated or disproportionate to the operating performance of our business, financial condition or results of operations. These broad market and industry factors may materially harm the market price of our common stock and expose us to securities class action litigation. Such litigation, even if unsuccessful, could be costly to defend and divert management's attention and resources, which could further materially harm our financial condition and results of operations.

Future sales of our common stock in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. As of August 13, 2018, we had 17,746,285 shares of common stock outstanding, all of which shares, other than shares held by our directors and certain officers, were eligible for sale in the public market, subject in some cases to compliance with the requirements of Rule 144, including the volume limitations and manner of sale requirements. In addition, all of the shares of common stock issuable upon exercise of warrants will be freely tradable without restriction or further registration upon issuance.

Our stockholders may experience significant dilution as a result of future equity offerings or issuances and exercise of outstanding options and warrants.

In order to raise additional capital or pursue strategic transactions, we may in the future offer, issue or sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock, including the issuance of common stock in relation to the achievement, if any, of milestones triggering our payment of earn-out consideration in connection with the EGEN acquisition. Our stockholders may experience significant dilution as a result of future equity offerings or issuances. Investors purchasing shares or other securities in the future could have rights superior to existing stockholders. As of August 13, 2018, we have a significant number of securities convertible into, or allowing the purchase of, our common stock, including 3,248,516 shares of common stock issuable upon exercise of warrants outstanding, 3,034,741 options to purchase shares of our common stock and restricted stock awards outstanding, and 365,152 shares of common stock reserved for future issuance under our stock incentive plans. Under the Controlled Equity Offering SM Sales Agreement entered into with Cantor Fitzgerald & Co. on February 1, 2013, we may offer and sell, from time to time through "at-the-market" offerings, up to an aggregate of $25 million of shares of our common stock. We had sold $12.8 million under the Sales Agreement as of June 30, 2018.

We may be unable to maintain compliance with The NASDAQ Marketplace Rules which could cause our common stock to be delisted from The NASDAQ Capital Market. This could result in the lack of a market for our common stock, cause a decrease in the value of an investment in us, and adversely affect our business, financial condition and results of operations.

Our common stock is currently listed on The NASDAQ Capital Market. To maintain the listing of our common stock on The NASDAQ Capital Market, we are required to meet certain listing requirements, including, among others, either: (i) a minimum closing bid price of $1.00 per share, a market value of publicly held shares (excluding shares held by our executive officers, directors and 10% or more stockholders) of at least $1 million and stockholders' equity of at least $2.5 million; or (ii) a minimum closing bid price of $1.00 per share, a market value of publicly held shares (excluding shares held by our executive officers, directors and 10% or more stockholders) of at least $1 million and a total market value of listed securities of at least $35 million. As of August 13, 2018, the closing sale price per share of our common stock was $2.77, the total market value of our publicly held shares of our common stock (excluding shares held by our executive officers, directors and 10% or more stockholders) was approximately $48.9 million and the total market value of our listed securities was approximately $49.2 million. There is no assurance that we will continue to meet the minimum closing price requirement and other listing requirements. As of June 30, 2018, we had stockholders' equity of approximately $19.1 million.

The adverse capital and credit market conditions could affect our liquidity.

Adverse capital and credit market conditions could affect our ability to meet liquidity needs, as well as our access to capital and cost of capital. The capital and credit markets have experienced extreme volatility and disruption in recent years. Our results of operations, financial condition, cash flows and capital position could be materially adversely affected by continued disruptions in the capital and credit markets.

Our ability to use net operating losses to offset future taxable income are subject to certain limitations.

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. We currently have significant net operating losses (NOLs) that may be used to offset future taxable income. In general, under Section 382 of the Internal Revenue Code of 1986, as amended (the Code), a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change NOLs to offset future taxable income. During 2017, 2016 and years prior, we performed analyses to determine if there were changes in ownership, as defined by Section 382 of the Internal Revenue Code that would limit our ability to utilize certain net operating loss and tax credit carry forwards. We determined we experienced ownership, as defined by Section 382, in connection with certain common stock offerings in 2011, 2013, 2015 and 2017. As a result, the utilization of our federal tax net operating loss carry forwards generated prior to the ownership changes is limited. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Code, which would significantly limit our ability to utilize NOLs to offset future taxable income.

We have never paid cash dividends on our common stock in the past and do not anticipate paying cash dividends on our common stock in the foreseeable future.

We have never declared or paid cash dividends on our common stock. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for the foreseeable future for holders of our common stock.

Anti-takeover provisions in our charter documents and Delaware law could prevent or delay a change in control.

Our certificate of incorporation and bylaws may discourage, delay or prevent a merger or acquisition that a stockholder may consider favorable by authorizing the issuance of "blank check" preferred stock. This preferred stock may be issued by our board of directors on such terms as it determines, without further stockholder approval. Therefore, our board of directors may issue such preferred stock on terms unfavorable to a potential bidder in the event that our board of directors opposes a merger or acquisition. In addition, our classified board of directors may discourage such transactions by increasing the amount of time necessary to obtain majority representation on our board of directors. Certain other provisions of our bylaws and of Delaware law may also discourage, delay or prevent a third party from acquiring or merging with us, even if such action were beneficial to some, or even a majority, of our stockholders.

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

None

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

4.1+	Form of Warrant to Purchase Common Stock.
10.0+	Venture Loan and Security Agreement dated June 27, 2018, by and between Celsion corporation and Horizon Technology Finance Corporation.
10.1	Lease Agreement dated January 15, 2018, by and between Celsion Corporation and HudsonAlpha Institute of Biotechnology for office and lab space located in Huntsville, Alabama, incorporated herein by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of the Company for the quarter ended March 31, 2018.
10.2	Celsion Corporation 2018 Stock Incentive Plan, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed May 15, 2018.
31.1+	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2+	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
+	Filed herewith.
101**	The following materials from the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, formatted in XBRL (Extensible Business Reporting Language): (i) the unaudited Consolidated Balance Sheets, (ii) the unaudited Consolidated Statements of Operations, (iii) the unaudited Consolidated Statements of Comprehensive Loss, (iv) the unaudited Consolidated Statements of Cash Flows, (v) the unaudited Consolidated Statements of Change in Stockholders' Equity (Deficit), and (vi) Notes to Consolidated Financial Statements.
*	Exhibit 32.1 is being furnished and shall not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall such exhibit be deemed to be incorporated by reference in any registration statement or other document filed under the Securities Act of 1933, as amended, or the Securities Exchange Act, except as otherwise stated in such filing.
**	XBRL information is filed herewith.

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.

August 14, 2018

CELSION CORPORATION

Registrant

By: */s/ Jeffrey W. Church*
Jeffrey W. Church
Senior Vice President and Chief Financial Officer

By: */s/ Michael H. Tardugno*
Michael H. Tardugno
Chairman, President and Chief Executive Officer

THIS WARRANT HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED OR ANY STATE SECURITIES LAWS. NO SALE OR DISPOSITION MAY BE EFFECTED WITHOUT (i) EFFECTIVE REGISTRATION STATEMENTS RELATED THERETO, (ii) AN OPINION OF COUNSEL OR OTHER EVIDENCE, REASONABLY SATISFACTORY TO THE COMPANY, THAT SUCH REGISTRATIONS ARE NOT REQUIRED, (iii) RECEIPT OF NO-ACTION LETTERS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITIES, OR (iv) OTHERWISE COMPLYING WITH THE PROVISIONS OF SECTION 7 OF THIS WARRANT.

CELSION CORPORATION

WARRANT TO PURCHASE SHARES
OF COMMON STOCK

(Loan __)

THIS CERTIFIES THAT, for value received, HORIZON TECHNOLOGY FINANCE CORPORATION ("Horizon") and its assignees are entitled to subscribe for and purchase 47,528 fully paid and nonassessable shares of Common Stock (as adjusted pursuant to Section 4 hereof, the "Shares") of CELSION CORPORATION, a Delaware corporation (the "Company"), at the price per share of $2.63 (such price and such other price as shall result, from time to time, from the adjustments specified in Section 4 hereof is herein referred to as the "Warrant Price"), subject to the provisions and upon the terms and conditions hereinafter set forth. As used herein, (a) the term "Date of Grant" shall mean June 27, 2018, and (b) the term "Other Warrants" shall mean any other warrants issued by the Company in connection with the transaction with respect to which this Warrant was issued, and any warrant issued upon transfer or partial exercise of or in lieu of this Warrant. The term "Warrant" as used herein shall be deemed to include Other Warrants unless the context clearly requires otherwise.

1. Term. The purchase right represented by this Warrant is exercisable, in whole or in part, at any time and from time to time from the Date of Grant through ten (10) years after the Date of Grant (the "Term").

2. Method of Exercise; Payment; Issuance of New Warrant. Subject to Section 1 hereof, the purchase right represented by this Warrant may be exercised by the holder hereof, in whole or in part and from time to time, at the election of the holder hereof, by (a) the surrender of this Warrant (with the notice of exercise substantially in the form attached hereto as Exhibit A-1 duly completed and executed) at the principal office of the Company and by the payment to the Company, by certified or bank check, or by wire transfer to an account designated by the Company (a "Wire Transfer") of an amount equal to the then applicable Warrant Price multiplied by the number of Shares then being purchased; (b) if in connection with a registered public offering of the Company's securities, the surrender of this Warrant (with the notice of exercise form attached hereto as Exhibit A-2 duly completed and executed) at the principal office of the Company together with notice of arrangements reasonably satisfactory to the Company for payment to the Company either by certified or bank check or by Wire Transfer from the proceeds of the sale of shares to be sold by the holder in such public offering of an amount equal to the then applicable Warrant Price per share multiplied by the number of Shares then being purchased; or (c) exercise of the "net issuance" right provided for in Section 10.2 hereof. The person or persons in whose name(s) any certificate(s) representing the Shares shall be issuable upon exercise of this Warrant shall be deemed to have become the holder(s) of record of, and shall be treated for all purposes as the record holder(s) of, the shares represented thereby (and such shares shall be deemed to have been issued) immediately prior to the close of business on the date or dates upon which this Warrant is exercised. In the event of any exercise of the rights represented by this Warrant, certificates for the shares of stock so purchased shall be delivered to the holder hereof as soon as possible and in any event within thirty (30) days after such exercise and, unless this Warrant has been fully exercised or expired, a new Warrant representing the portion of the Shares, if any, with respect to which this Warrant shall not then have been exercised shall also be issued to the holder hereof as soon as possible and in any event within such thirty-day period; provided, however, at such time as the Company is subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, if requested by the holder of this Warrant, the Company shall cause its transfer agent to deliver the certificate representing Shares issued upon exercise of this Warrant to a broker or other person (as directed by the holder exercising this Warrant) within the time period required to settle any trade made by the holder after exercise of this Warrant.

3. Stock Fully Paid; Reservation of Shares. All Shares that may be issued upon the exercise of the rights represented by this Warrant will, upon issuance pursuant to the terms and conditions herein, be fully paid and nonassessable, and free from all preemptive rights and taxes, liens and charges with respect to the issue thereof. During the period within which the rights represented by this Warrant may be exercised, the Company will at all times have authorized, and reserved for the purpose of the issue upon exercise of the purchase rights evidenced by this Warrant, a sufficient number of shares of its Common Stock to provide for the exercise of the rights represented by this Warrant.

4. Adjustment of Warrant Price and Number of Shares. The number and kind of securities purchasable upon the exercise of this Warrant and the Warrant Price shall be subject to adjustment from time to time upon the occurrence of certain events, as follows:

(a) Reclassification or Merger. In case of any reclassification or change of securities of the class issuable upon exercise of this Warrant (other than a change in par value, or from par value to no par value, or from no par value to par value, or as a result of a subdivision or combination), or in case of any merger of the Company with or into another corporation (other than a merger with another corporation in which the Company is the acquiring and the surviving corporation and which does not result in any reclassification or change of outstanding securities issuable upon exercise of this Warrant), or in case of any sale of all or substantially all of the assets of the Company, the Company, or such successor or purchasing corporation, as the case may be, shall duly execute and deliver to the holder of this Warrant a new Warrant (in form and substance satisfactory to the holder of this Warrant), so that the holder of this Warrant shall have the right to receive upon exercise of this Warrant, at a total purchase price not to exceed that payable upon the exercise of the unexercised portion of this Warrant, and in lieu of the shares of Common Stock theretofore issuable upon exercise of this Warrant, (i) the kind and amount of shares of stock, other securities, money and property receivable upon such reclassification, change, merger or sale by a holder of the number of shares of Common Stock then purchasable under this Warrant, or (ii) in the case of such a merger or sale in which the consideration paid consists all or in part of assets other than securities of the successor or purchasing corporation, at the option of the holder of this Warrant, the securities of the successor or purchasing corporation having a value at the time of the transaction equivalent to the value of the Common Stock purchasable upon exercise of this Warrant at the time of the transaction. Any new Warrant shall provide for adjustments that shall be as nearly equivalent as may be practicable to the adjustments provided for in this Section 4. The provisions of this Section 4(a) shall similarly apply to successive reclassifications, changes, mergers and sales.

(b) Subdivision or Combination of Shares. If the Company at any time while this Warrant remains outstanding and unexpired shall subdivide or combine its outstanding shares of Common Stock, the Warrant Price shall be proportionately decreased and the number of Shares issuable hereunder shall be proportionately increased in the case of a subdivision and the Warrant Price shall be proportionately increased and the number of Shares issuable hereunder shall be proportionately decreased in the case of a combination.

(c) Stock Dividends and Other Distributions. If the Company at any time while this Warrant is outstanding and unexpired shall (i) pay a dividend with respect to its Common Stock payable in Common Stock, then the Warrant Price shall be adjusted, from and after the date of determination of shareholders entitled to receive such dividend or distribution, to that price determined by multiplying the Warrant Price in effect immediately prior to such date of determination by a fraction (A) the numerator of which shall be the total number of shares of Common Stock outstanding immediately prior to such dividend or distribution, and (B) the denominator of which shall be the total number of shares of Common Stock outstanding immediately after such dividend or distribution; or (ii) make any other distribution with respect to Common Stock (except any distribution specifically provided for in Sections 4(a) and 4(b)), then, in each such case, provision shall be made by the Company such that the holder of this Warrant shall receive upon exercise of this Warrant a proportionate share of any such dividend or distribution as though it were the holder of the Shares as of the record date fixed for the determination of the shareholders of the Company entitled to receive such dividend or distribution.

(d) Adjustment of Number of Shares. Upon each adjustment in the Warrant Price, the number of Shares purchasable hereunder shall be adjusted, to the nearest whole share, to the product obtained by multiplying the number of Shares purchasable immediately prior to such adjustment in the Warrant Price by a fraction, the numerator of which shall be the Warrant Price immediately prior to such adjustment and the denominator of which shall be the Warrant Price immediately thereafter.

5. Notice of Adjustments. Whenever the Warrant Price or the number of Shares purchasable hereunder shall be adjusted pursuant to Section 4 hereof, the Company shall make a certificate signed by its chief financial officer setting forth, in reasonable detail, the event requiring the adjustment, the amount of the adjustment, the method by which such adjustment was calculated, and the Warrant Price and the number of Shares purchasable hereunder after giving effect to such adjustment, and shall cause copies of such certificate to be mailed (without regard to Section 13 hereof, by first class mail, postage prepaid) to the holder of this Warrant.

6. Fractional Shares. No fractional shares of Common Stock will be issued in connection with any exercise hereunder, but in lieu of such fractional shares the Company shall make a cash payment therefor based on the fair market value of the Common Stock on the date of exercise as reasonably determined in good faith by the Company’s Board of Directors.

7. Compliance with Securities Act; Disposition of Warrant or Shares of Common Stock.

(a) Compliance with Securities Act. The holder of this Warrant, by acceptance hereof, agrees that this Warrant, and the Shares to be issued upon exercise hereof are being acquired for investment and that such holder will not offer, sell or otherwise dispose of this Warrant, or any Shares except under circumstances which will not result in a violation of the Securities Act of 1933, as amended (the "Act") or any applicable state securities laws. Upon exercise of this Warrant, unless the Shares being acquired are registered under the Act and any applicable state securities laws or an exemption from such registration is available, the holder hereof shall confirm in writing that the Shares so purchased are being acquired for investment and not with a view toward distribution or resale in violation of the Act and shall confirm such other matters related thereto as may be reasonably requested by the Company. This Warrant and all Shares issued upon exercise of this Warrant (unless registered under the Act and any applicable state securities laws) shall be stamped or imprinted with a legend in substantially the following form:

"THE SECURITIES EVIDENCED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY STATE SECURITIES LAWS. NO SALE OR DISPOSITION MAY BE EFFECTED WITHOUT (i) EFFECTIVE REGISTRATION STATEMENTS RELATED THERETO, (ii) AN OPINION OF COUNSEL OR OTHER EVIDENCE, REASONABLY SATISFACTORY TO THE COMPANY, THAT SUCH REGISTRATIONS ARE NOT REQUIRED, (iii) RECEIPT OF NO-ACTION LETTERS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITIES, OR (iv) OTHERWISE COMPLYING WITH THE PROVISIONS OF SECTION 7 OF THE WARRANT UNDER WHICH THESE SECURITIES WERE ISSUED, DIRECTLY OR INDIRECTLY."

Said legend shall be removed by the Company, upon the request of a holder, at such time as the restrictions on the transfer of the applicable security shall have terminated. In addition, in connection with the issuance of this Warrant, the holder specifically represents to the Company by acceptance of this Warrant as follows:

(1) The holder is aware of the Company's business affairs and financial condition, and has acquired information about the Company sufficient to reach an informed and knowledgeable decision to acquire this Warrant. The holder is acquiring this Warrant for its own account for investment purposes only and not with a view to, or for the resale in connection with, any "distribution" thereof in violation of the Act.

(2) The holder understands that this Warrant has not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the holder's investment intent as expressed herein.

(3) The holder further understands that this Warrant must be held indefinitely unless subsequently registered under the Act and qualified under any applicable state securities laws, or unless exemptions from registration and qualification are otherwise available. The holder is aware of the provisions of Rule 144, promulgated under the Act.

(4) The holder is an "accredited investor" as such term is defined in Rule 501 of Regulation D promulgated under the Act.

(b) Disposition of Warrant or Shares. With respect to any offer, sale or other disposition of this Warrant or any Shares acquired pursuant to the exercise of this Warrant prior to registration of such Warrant or Shares, the holder hereof agrees to give written notice to the Company prior thereto, describing briefly the manner thereof, together with a written opinion of such holder's counsel, or other evidence, if reasonably satisfactory to the Company, to the effect that such offer, sale or other disposition may be effected without registration or qualification (under the Act as then in effect or any federal or state securities law then in effect) of this Warrant or the Shares and indicating whether or not under the Act certificates for this Warrant or the Shares to be sold or otherwise disposed of require any restrictive legend as to applicable restrictions on transferability in order to ensure compliance with such law. Upon receiving such written notice and reasonably satisfactory opinion or other evidence, the Company, as promptly as practicable but no later than fifteen (15) days after receipt of the written notice, shall notify such holder that such holder may sell or otherwise dispose of this Warrant or such Shares, all in accordance with the terms of the notice delivered to the Company. If a determination has been made pursuant to this Section 7(b) that the opinion of counsel for the holder or other evidence is not reasonably satisfactory to the Company, the Company shall so notify the holder promptly with details thereof after such determination has been made. Notwithstanding the foregoing, this Warrant or such Shares may, as to such federal laws, be offered, sold or otherwise disposed of in accordance with Rule 144 or 144A under the Act, provided that the Company shall have been furnished with such information as the Company may reasonably request to provide a reasonable assurance that the provisions of Rule 144 or 144A have been satisfied. Each certificate representing this Warrant or the Shares thus transferred (except a transfer pursuant to Rule 144 or 144A) shall bear a legend as to the applicable restrictions on transferability in order to ensure compliance with such laws, unless in the aforesaid opinion of counsel for the holder, such legend is not required in order to ensure compliance with such laws. The Company may issue stop transfer instructions to its transfer agent in connection with such restrictions.

(c) Applicability of Restrictions. Neither any restrictions of any legend described in this Warrant nor the requirements of Section 7(b) above shall apply to any transfer of, or grant of a security interest in, this Warrant (or the Common Stock obtainable upon exercise thereof) or any part hereof (i) to a partner of the holder if the holder is a partnership or to a member of the holder if the holder is a limited liability company, (ii) to a partnership of which the holder is a partner or to a limited liability company of which the holder is a member, (iii) to any affiliate of the holder if the holder is a corporation, (iv) notwithstanding the foregoing, to any corporation, company, limited liability company, limited partnership, partnership, or other person managed or sponsored by Horizon or in which Horizon has an interest, (v) or to a lender to the holder or any of the foregoing; provided, however, in any such transfer, if applicable, the transferee shall on the Company's request agree in writing to be bound by the terms of this Warrant as if an original holder hereof.

8. Rights as Shareholders; Information. No holder of this Warrant, as such, shall be entitled to vote or receive dividends or be deemed the holder of Common Stock which may at any time be issuable upon the exercise hereof for any purpose, nor shall anything contained herein be construed to confer upon the holder of this Warrant, as such, any of the rights of a shareholder of the Company or any right to vote for the election of directors or upon any matter submitted to shareholders at any meeting thereof, or to receive notice of meetings, or to receive dividends or subscription rights or otherwise until this Warrant shall have been exercised and the Shares purchasable upon the exercise hereof shall have become deliverable, as provided herein. Notwithstanding the foregoing, the Company will transmit to the holder of this Warrant such information, documents and reports as are generally distributed to the holders of any class or series of the securities of the Company concurrently with the distribution thereof to the shareholders.

9. Registration Rights. The Shares issuable hereunder initially shall be exempt from registration under the Securities Act. Following the Date of Grant, and in any case within ninety (90) days thereof, Company shall promptly prepare, file and use its reasonable efforts to cause to become effective as soon as practicable thereafter, a registration statement on Form S-1 or such other form as may be appropriate to be filed with the SEC by Company under the Act (together with any amendments or supplements thereto, whether prior to or after the effective date thereof, the "Registration Statement") covering the public resale in the United States of the Shares to be issued pursuant to this Warrant, and Company shall use its reasonable efforts to keep the Registration Statement continuously effective during the Term. Any such registration shall be subject to the customary terms and conditions used in connection with resale prospectuses. Company's obligations under this Section are contingent upon Holder providing promptly all information concerning such Holder and its proposed plan of distribution as Company may reasonably request in connection with any of the foregoing. Company may by written notice to the Holder immediately suspend the use of any resale prospectus for a period not to exceed sixty consecutive days in any one instance and for a period not to exceed one hundred twenty calendar days in any twelve-month period (each, a "Suspension Period") at any time that (i) Company becomes engaged in a business activity or negotiation or any other event has occurred or is anticipated which is not disclosed in that prospectus which Company reasonably believes should be disclosed therein under applicable law and which Company desires to keep confidential for business purposes or (ii) Company determines that a particular disclosure so determined to be required to be disclosed therein be premature or would adversely affect Company or its business or prospects. Company will use its commercially reasonable efforts to ensure that the use of the Registration Statement may be resumed as soon as practicable. Company shall bear all costs and expenses associated with the registration of the Shares as specified in this Section and the preparation and filing of the Registration Statement, including, without limitation, all printing expenses, legal fees and disbursement of Company's outside counsel, commissions, NASDAQ and blue sky registration filing fees and transfer agents' and registrars' fees, but not including underwriting commissions or similar charges and legal fees and disbursements of counsel to Holder.

10. Additional Rights.

10.1 Acquisition Transactions. The Company shall provide the holder of this Warrant with at least twenty (20) days' written notice prior to closing thereof of the terms and conditions of any of the following transactions (to the extent the Company has notice thereof): (i) the sale, lease, exchange, conveyance or other disposition of all or substantially all of the Company's property or business, or (ii) its merger into or consolidation with any other corporation (other than a wholly-owned subsidiary of the Company), or any transaction (including a merger or other reorganization) or series of related transactions, in which more than 50% of the voting power of the Company is disposed of.

10.2 Right to Convert Warrant into Stock: Net Issuance.

(a) Right to Convert. In addition to and without limiting the rights of the holder under the terms of this Warrant, the holder shall have the right to convert this Warrant or any portion thereof (the "Conversion Right") into shares of Common Stock as provided in this Section 10.2 at any time or from time to time during the term of this Warrant. Upon exercise of the Conversion Right with respect to a particular number of shares subject to this Warrant (the "Converted Warrant Shares"), the Company shall deliver to the holder (without payment by the holder of any exercise price or any cash or other consideration) that number of shares of fully paid and nonassessable Common Stock as is determined according to the following formula:

$$X = \frac{B - A}{Y}$$

Where: X = the number of shares of Common Stock that shall be issued to holder

Y = the fair market value of one share of Common Stock

A = the aggregate Warrant Price of the specified number of Converted Warrant Shares immediately prior to the exercise of the Conversion Right *(i.e.*, the number of Converted Warrant Shares *multiplied by* the Warrant Price)

B = the aggregate fair market value of the specified number of Converted Warrant Shares (*i.e.*, the number of Converted Warrant Shares *multiplied by* the fair market value of one Converted Warrant Share)

No fractional shares shall be issuable upon exercise of the Conversion Right, and, if the number of shares to be issued determined in accordance with the foregoing formula is other than a whole number, the Company shall pay to the holder an amount in cash equal to the fair market value of the resulting fractional share on the Conversion Date (as hereinafter defined). For purposes of Section 10 of this Warrant, shares issued pursuant to the Conversion Right shall be treated as if they were issued upon the exercise of this Warrant.

(b) Method of Exercise. The Conversion Right may be exercised by the holder by the surrender of this Warrant at the principal office of the Company together with a written statement (which may be in the form of Exhibit A-1 or Exhibit A-2 hereto) specifying that the holder thereby intends to exercise the Conversion Right and indicating the number of shares subject to this Warrant which are being surrendered (referred to in Section 10.2(a) hereof as the Converted Warrant Shares) in exercise of the Conversion Right. Such conversion shall be effective upon receipt by the Company of this Warrant together with the aforesaid written statement, or on such later date as is specified therein (the "Conversion Date"), and, at the election of the holder hereof, may be made contingent upon the closing of the sale of the Company's Common Stock to the public in a public offering pursuant to a Registration Statement under the Act (a "Public Offering"). Certificates for the shares issuable upon exercise of the Conversion Right and, if applicable, a new warrant evidencing the balance of the shares remaining subject to this Warrant, shall be issued as of the Conversion Date and shall be delivered to the holder within thirty (30) days following the Conversion Date.

(c) Determination of Fair Market Value. For purposes of this Section 10.2, "fair market value" of a share of Common Stock as of a particular date (the "Determination Date") shall mean:

(i) If the Conversion Right is exercised in connection with and contingent upon a Public Offering, and if the Company's Registration Statement relating to such Public Offering ("Registration Statement") has been declared effective by the Securities and Exchange Commission, then the initial "Price to Public" specified in the final prospectus with respect to such offering.

(ii) If the Conversion Right is not exercised in connection with and contingent upon a Public Offering, then as follows:

(A) If traded on a securities exchange, the fair market value of the Common Stock shall be deemed to be the average of the closing prices of the Common Stock on such exchange over the five trading days immediately prior to the Determination Date;

(B) If traded on the NASDAQ Stock Market or other over-the-counter system, the fair market value of the Common Stock shall be deemed to be the average of the closing prices of the Common Stock over the five trading days immediately prior to the Determination Date; and

(C) If there is no public market for the Common Stock, then fair market value shall be determined by mutual agreement of the holder of this Warrant and the Company.

If closing prices or closing bid prices are no longer reported by a securities exchange or other trading system, the closing price or closing bid price shall be that which is reported by such securities exchange or other trading system at 4:00 p.m. New York City time on the applicable trading day.

10.3 Exercise Prior to Expiration. To the extent this Warrant is not previously exercised as to all of the Shares subject hereto, and if the fair market value of one share of the Common Stock is greater than the Warrant Price then in effect, this Warrant shall be deemed automatically exercised pursuant to Section 10.2 above (even if not surrendered) immediately before its expiration. For purposes of such automatic exercise, the fair market value of one share of the Common Stock upon such expiration shall be determined pursuant to Section 10.2(c). To the extent this Warrant or any portion thereof is deemed automatically exercised pursuant to this Section 10.3, the Company agrees to promptly notify the holder hereof of the number of Shares, if any, the holder hereof is to receive by reason of such automatic exercise.

11. Representations and Warranties. The Company represents and warrants to the holder of this Warrant as follows:

(a) This Warrant has been duly authorized and executed by the Company and is a valid and binding obligation of the Company enforceable in accordance with its terms, subject to laws of general application relating to bankruptcy, insolvency and the relief of debtors and the rules of law or principles at equity governing specific performance, injunctive relief and other equitable remedies.

(b) The Shares have been duly authorized and reserved for issuance by the Company and, when issued in accordance with the terms hereof, will be validly issued, fully paid and nonassessable and free from preemptive rights.

(c) A true and correct copy of the Company's Certificate of Incorporation, as amended through the Date of Grant has been provided to Holder (the "Charter"). The rights, preferences, privileges and restrictions granted to or imposed upon the classes and series of the Company's capital stock and the holders thereof are as set forth in the Charter.

(d) The execution and delivery of this Warrant are not, and the issuance of the Shares upon exercise of this Warrant in accordance with the terms hereof will not be, inconsistent with the Company's Charter or by-laws, do not and will not contravene any law, governmental rule or regulation, judgment or order applicable to the Company, and do not and will not conflict with or contravene any provision of, or constitute a default under, any indenture, mortgage, contract or other instrument of which the Company is a party or by which it is bound or require the consent or approval of, the giving of notice to, the registration or filing with or the taking of any action in respect of or by, any Federal, state or local government authority or agency or other person, except for the filing of notices pursuant to federal and state securities laws, which filings will be effected by the time required thereby.

(e) There are no actions, suits, audits, investigations or proceedings pending or, to the knowledge of the Company, threatened against the Company in any court or before any governmental commission, board or authority which, if adversely determined, could have a material adverse effect on the ability of the Company to perform its obligations under this Warrant.

(f) The number of shares of Common Stock of the Company outstanding on the date hereof, on a fully diluted basis (assuming the conversion of all outstanding convertible securities and the exercise of all outstanding options and warrants), does not exceed 24,200,000 shares.

12. Modification and Waiver. This Warrant and any provision hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of the same is sought.

13. Notices. Any notice, request, communication or other document required or permitted to be given or delivered to the holder hereof or the Company shall be delivered, or shall be sent by certified or registered mail, postage prepaid, to each such holder at its address as shown on the books of the Company or to the Company at the address indicated therefor on the signature page of this Warrant.

14. Binding Effect on Successors. This Warrant shall be binding upon any corporation succeeding the Company by merger, consolidation or acquisition of all or substantially all of the Company's assets, and all of the obligations of the Company relating to the Shares issuable upon the exercise or conversion of this Warrant shall survive the exercise, conversion and termination of this Warrant and all of the covenants and agreements of the Company shall inure to the benefit of the successors and assigns of the holder hereof.

15. Lost Warrants or Stock Certificates. The Company covenants to the holder hereof that, upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant or any stock certificate and, in the case of any such loss, theft or destruction, upon receipt of an indemnity reasonably satisfactory to the Company, or in the case of any such mutilation upon surrender and cancellation of such Warrant or stock certificate, the Company will make and deliver a new Warrant or stock certificate, of like tenor, in lieu of the lost, stolen, destroyed or mutilated Warrant or stock certificate.

16. Descriptive Headings. The descriptive headings of the various Sections of this Warrant are inserted for convenience only and do not constitute a part of this Warrant. The language in this Warrant shall be construed as to its fair meaning without regard to which party drafted this Warrant.

17. Governing Law. This Warrant shall be construed and enforced in accordance with, and the rights of the parties shall be governed by, the laws of the State of Delaware.

18. Survival of Representations, Warranties and Agreements. All representations and warranties of the Company and the holder hereof contained herein shall survive the Date of Grant, the exercise or conversion of this Warrant (or any part hereof) or the termination or expiration of rights hereunder. All agreements of the Company and the holder hereof contained herein shall survive indefinitely until, by their respective terms, they are no longer operative.

19. Remedies. In case any one or more of the covenants and agreements contained in this Warrant shall have been breached, the holders hereof (in the case of a breach by the Company), or the Company (in the case of a breach by a holder), may proceed to protect and enforce their or its rights either by suit in equity and/or by action at law, including, but not limited to, an action for damages as a result of any such breach and/or an action for specific performance of any such covenant or agreement contained in this Warrant.

20. No Impairment of Rights. The Company will not, by amendment of its Charter or through any other means, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the holder of this Warrant against impairment.

21. Severability. The invalidity or unenforceability of any provision of this Warrant in any jurisdiction shall not affect the validity or enforceability of such provision in any other jurisdiction, or affect any other provision of this Warrant, which shall remain in full force and effect.

22. Recovery of Litigation Costs. If any legal action or other proceeding is brought for the enforcement of this Warrant, or because of an alleged dispute, breach, default, or misrepresentation in connection with any of the provisions of this Warrant, the successful or prevailing party or parties shall be entitled to recover reasonable attorneys' fees and other costs incurred in that action or proceeding, in addition to any other relief to which it or they may be entitled.

23. Entire Agreement; Modification. This Warrant constitutes the entire agreement between the parties pertaining to the subject matter contained in it and supersedes all prior and contemporaneous agreements, representations, and undertakings of the parties, whether oral or written, with respect to such subject matter.

[Remainder of page intentionally blank. Signature page follows.]

The Company has caused this Warrant to be duly executed and delivered as of the Date of Grant specified above.

CELSION CORPORATION

By: _____

Name: Jeffrey W. Church
Title: Senior Vice President and Chief Financial Officer
Address: 997 Lenox Drive, Suite 100
Lawrenceville, NJ 08648

[SIGNATURE PAGE TO COMMON STOCK WARRANT (LOAN A)]

EXHIBIT A-1

NOTICE OF EXERCISE

To: Celsion Corporation (the "Company")

1. The undersigned hereby:

   [ ] elects to purchase_____ shares of Common Stock of the Company pursuant to the terms of the attached Warrant, and tenders herewith payment of the purchase price of such shares in full, or

   [ ] elects to exercise its net issuance rights pursuant to Section 10.2 of the attached Warrant with respect to_____shares of Common Stock.

2. Please issue a certificate or certificates representing _____ shares in the name of the undersigned or in such other name or names as are specified below:

_____
(Name)

_____

_____
(Address)

3. The undersigned represents that the aforesaid shares are being acquired for the account of the undersigned for investment and not with a view to, or for resale in connection with, the distribution thereof and that the undersigned has no present intention of distributing or reselling such shares, all except as in compliance with applicable securities laws.

_____
(Signature)

_____
(Date)

EXHIBIT A-2

NOTICE OF EXERCISE

To: Celsion Corporation (the "Company")

1. Contingent upon and effective immediately prior to the closing (the "Closing") of the Company's public offering contemplated by the Registration Statement on Form S___, filed_____, 20__, the undersigned hereby:

[ ] elects to purchase_____shares of Common Stock of the Company (or such lesser number of shares as may be sold on behalf of the undersigned at the Closing) pursuant to the terms of the attached Warrant, or

[ ] elects to exercise its net issuance rights pursuant to Section 10.2 of the attached Warrant with respect to_____shares of Common Stock.

2. Please deliver to the custodian for the selling shareholders a stock certificate representing such_____shares.

3. The undersigned has instructed the custodian for the selling shareholders to deliver to the Company $_____or, if less, the net proceeds due the undersigned from the sale of shares in the aforesaid public offering. If such net proceeds are less than the purchase price for such shares, the undersigned agrees to deliver the difference to the Company prior to the Closing.

_____
(Signature)

_____
(Date)

VENTURE LOAN AND SECURITY AGREEMENT

Dated as of June 27, 2018

by and among

HORIZON TECHNOLOGY FINANCE CORPORATION,
a Delaware corporation
312 Farmington Avenue
Farmington, CT 06032

as a Lender and Collateral Agent

And

CELSION CORPORATION,
a Delaware corporation
997 Lenox Drive, Suite 100
Lawrenceville, NJ 08648

as Borrower

Loan A Commitment Amount: $2,500,000
Loan B Commitment Amount: $2,500,000
Loan C Commitment Amount: $2,500,000
Loan D Commitment Amount: $2,500,000

Loan A Commitment Termination Date:	June 29, 2018
Loan B Commitment Termination Date:	June 29, 2018
Loan C Commitment Termination Date:	June 29, 2018
Loan D Commitment Termination Date:	June 29, 2018

The Lender, Collateral Agent and Borrower hereby agree as follows:

AGREEMENT

1. Definitions and Construction.

1.1 Definitions. As used in this Agreement, the following capitalized terms shall have the following meanings (such meanings to be equally applicable to both the singular and plural forms of the terms defined):

"Account Control Agreement" means an agreement acceptable to Lender which perfects via control Lender's and Collateral Agent's security interest in Borrower's deposit accounts and/or securities accounts.

"Affiliate" means, with respect to any Person, any other Person that owns or controls directly or indirectly ten percent (10%) or more of the stock of another entity of such Person, any other Person that controls or is controlled by or is under common control with such Person and each of such Person's officers, directors, managers, joint venturers or partners. For purposes of this definition, the term "control" of a Person means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting Equity Securities, by contract or otherwise and the terms "controlled by" and "under common control with" shall have correlative meanings.

"Agreement" means this certain Venture Loan and Security Agreement by and among Borrower, Collateral Agent and Lender dated as of the date on the cover page hereto (as it may from time to time be amended, modified or supplemented in a writing signed by Borrower, Collateral Agent and Lender).

"Anti-Terrorism Laws" means any laws relating to terrorism or money laundering, including Executive Order No. 13224 (effective September 24, 2001), the USA PATRIOT Act, the laws comprising or implementing the Bank Secrecy Act, and the laws administered by OFAC.

"Borrower" means Borrower as set forth on the cover page of this Agreement.

"Business Day" means any day that is not a Saturday, Sunday, or other day on which banking institutions are authorized or required to close in Connecticut or New Jersey.

"Claim" has the meaning given such term in Section 10.3 of this Agreement.

"Code" means the Uniform Commercial Code as adopted and in effect in the State of Connecticut, as amended from time to time; *provided* that if by reason of mandatory provisions of law, the creation and/or perfection or the effect of perfection or non-perfection of the security interest in any Collateral is governed by the Uniform Commercial Code as in effect in a jurisdiction other than the State of Connecticut, the term "Code" shall also mean the Uniform Commercial Code as in effect from time to time in such jurisdiction for purposes of the provisions hereof relating to such creation, perfection or effect of perfection or non-perfection.

"Collateral" has the meaning given such term in Section 4.1 of this Agreement.

"Collateral Agent" means Horizon, or any successor collateral agent appointed by Lender.

"Commitment Amount" means the Loan A Commitment Amount, the Loan B Commitment Amount, the Loan C Commitment Amount or the Loan D Commitment Amount, as applicable.

"Commitment Fee" has the meaning given such term in Section 2.6(c) of this Agreement.

"Consolidated" means the consolidation of accounts in accordance with GAAP.

"Default" means any Event of Default or any event which with the passing of time or the giving of notice or both would become an Event of Default hereunder.

"Default Rate" means the per annum rate of interest equal to five percent (5%) over the Loan Rate, but such rate shall in no event be more than the highest rate permitted by applicable law to be charged on commercial loans in a default situation.

"Disclosure Schedule" means Exhibit A attached hereto.

"Environmental Laws" means all foreign, federal, state or local laws, statutes, common law duties, rules, regulations, ordinances and codes, together with all administrative orders, directed duties, requests, licenses, authorizations and permits of, and agreements with, any Governmental Authorities, in each case relating to environmental, health, safety and land use matters, including the Comprehensive Environmental Response, Compensation and Liability Act of 1980, the Clean Air Act, the Federal Water Pollution Control Act of 1972, the Solid Waste Disposal Act, the Federal Resource Conservation and Recovery Act, the Toxic Substances Control Act and the Emergency Planning and Community Right-to-Know Act.

"Equity Securities" of any Person means (a) all common stock, preferred stock, participations, shares, partnership interests, membership interests or other equity interests in and of such Person (regardless of how designated and whether or not voting or non-voting) and (b) all warrants, options and other rights to acquire any of the foregoing.

"ERISA" has the meaning given to such term in Section 7.12 of this Agreement.

"Event of Default" has the meaning given to such term in Section 8 of this Agreement.

"Funding Certificate" means a certificate executed by a duly authorized Responsible Officer of Borrower substantially in the form of Exhibit B or such other form as Lender may agree to accept.

"Funding Date" means any date on which a Loan is made to or on account of Borrower under this Agreement.

"GAAP" means generally accepted accounting principles as in effect in the United States of America from time to time, consistently applied.

"Good Faith Deposit" has the meaning given such term in Section 2.6(a) of this Agreement.

"Governmental Authority" means (a) any federal, state, county, municipal or foreign government, or political subdivision thereof, (b) any governmental or quasi-governmental agency, authority, board, bureau, commission, department, instrumentality or public body, (c) any court or administrative tribunal, or (d) with respect to any Person, any arbitration tribunal or other non-governmental authority to whose jurisdiction that Person has consented.

"Hazardous Materials" means all those substances which are regulated by, or which may form the basis of liability under, any Environmental Law, including all substances identified under any Environmental Law as a pollutant, contaminant, hazardous waste, hazardous constituent, special waste, hazardous substance, hazardous material, or toxic substance, or petroleum or petroleum derived substance or waste.

"Horizon" means Horizon Technology Finance Corporation.

"Indebtedness" means, with respect to any Person, the aggregate amount of, without duplication, (a) all obligations of such Person for borrowed money, (b) all obligations of such Person evidenced by bonds, debentures, notes or other similar instruments, (c) all obligations of such Person to pay the deferred purchase price of property or services (excluding trade payables aged less than one hundred eighty (180) days), (d) all capital lease obligations of such Person, (e) all obligations or liabilities of others secured by a Lien on any asset of such Person, whether or not such obligation or liability is assumed, (f) all obligations or liabilities of others guaranteed by such Person, and (g) any other obligations or liabilities which are required by GAAP to be shown as debt on the balance sheet of such Person.

"Indemnified Person" has the meaning given such term in Section 10.3 of this Agreement.

"Intellectual Property" means, with respect to any Person, all of such Person's right, title and interest in and to patents, patent rights (and applications and registrations therefor and divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same), trademarks and service marks (and applications and registrations therefor and the goodwill associated therewith), whether registered or not, inventions, copyrights (including applications and registrations therefor and like protections in each work or authorship and derivative work thereof), whether published or unpublished, mask works (and applications and registrations therefor), trade names, trade styles, software and computer programs, source code, object code, trade secrets, licenses, methods, processes, know how, drawings, specifications, descriptions, and all memoranda, notes, and records with respect to any research and development, all whether now owned or subsequently acquired or developed by such Person and whether in tangible or intangible form or contained on magnetic media readable by machine together with all such magnetic media (but not including embedded computer programs and supporting information included within the definition of "goods" under the Code).

"Internal Revenue Code" has the meaning given such term in Section 5.19 of this Agreement.

"Investment" means the purchase or acquisition of any capital stock, equity interest, or any obligations or other securities of, or any interest in, any Person, or the extension of any advance, loan, extension of credit or capital contribution to, or any other investment in, or deposit with, any Person.

"Landlord Agreement" means an agreement substantially in the form provided by Lender to Borrower or such other form as Lender may agree to accept.

"Lender" means the Lender as set forth on the cover page of this Agreement.

"Lender's Expenses" means all reasonable costs or expenses (including reasonable attorneys' fees and expenses) incurred in connection with the preparation, negotiation, documentation, drafting, amendment, modification, administration, perfection and funding of the Loan Documents; and all of Lender's attorneys' fees, costs and expenses incurred in enforcing or defending the Loan Documents (including fees and expenses of appeal or review), including the exercise of any rights or remedies afforded hereunder or under applicable law, whether or not suit is brought, whether before or after bankruptcy or insolvency, including all fees and costs incurred by Lender in connection with such Lender's enforcement of its rights in a bankruptcy or insolvency proceeding filed by or against Borrower, any Subsidiary or their respective Property.

"Lien" means any voluntary or involuntary security interest, pledge, bailment, lease, mortgage, hypothecation, conditional sales and title retention agreement, encumbrance or other lien with respect to any Property in favor of any Person.

"Loan" means each advance of credit by Lender to Borrower under this Agreement.

"Loan A" means the advance of credit by Horizon to Borrower under this Agreement in the Loan A Commitment Amount.

"Loan A Commitment Amount" has the meaning set forth on the cover page of this Agreement.

"Loan A Commitment Termination Date" has the meaning set forth on the cover page of this Agreement.

"Loan A Final Payment" has the meaning given such term in Section 2.2(g) of this Agreement.

"Loan Amortization Date" means, with respect to each Loan, the Payment Date on which Borrower is required, pursuant to Section 2.2(a) below, to commence making equal payments of principal plus accrued interest on the outstanding principal amount of such Loan.

"Loan B" means the advance of credit by Horizon to Borrower under this Agreement in the Loan B Commitment Amount.

"Loan B Commitment Amount" has the meaning set forth on the cover page of this Agreement.

"Loan B Commitment Termination Date" has the meaning set forth on the cover page of this Agreement.

"Loan B Final Payment" has the meaning given such term in Section 2.2(g) of this Agreement.

"Loan C" means the advance of credit by Horizon to Borrower under this Agreement in the Loan C Commitment Amount.

"Loan C Commitment Amount" has the meaning set forth on the cover page of this Agreement.

"Loan C Commitment Termination Date" has the meaning set forth on the cover page of this Agreement.

"Loan C Final Payment" has the meaning given such term in Section 2.2(g) of this Agreement.

"Loan D" means the advance of credit by Horizon to Borrower under this Agreement in the Loan D Commitment Amount.

"Loan D Commitment Amount" has the meaning set forth on the cover page of this Agreement.

"Loan D Commitment Termination Date" has the meaning set forth on the cover page of this Agreement.

"Loan D Final Payment" has the meaning given such term in Section 2.2(g) of this Agreement.

"Loan Documents" means, collectively, this Agreement, the Notes, the Warrants, any Landlord Agreement, any Account Control Agreement and all other documents, instruments and agreements entered into in connection with this Agreement.

"Loan Rate" means, with respect to each Loan, the per annum rate of interest equal to 9.625% plus the amount by which the one month LIBOR Rate (rounded to the nearest one hundredth percent), as reported in the Wall Street Journal exceeds 2.0%, provided, however that to the extent LIBOR (a) is no longer reported in the Wall Street Journal, (b) is no longer widely used as a benchmark market rate for new facilities of this type, or (c) becomes permanently unavailable, Lender shall select a successor benchmark rate, which successor rate shall be applied in a manner consistent with market practice, or if there is no consistent market practice, such successor rate shall be applied in a manner reasonably determined by Lender. Notwithstanding the foregoing, in no event shall the Loan Rate be less than 9.625%.

"Material Adverse Effect" means a material adverse effect on (a) the condition (financial or otherwise), business, operations, or Properties of Borrower, (b) the ability of Borrower to perform its Obligations under the Loan Documents or (c) the Collateral or Collateral Agent's or Lender's security interest in the Collateral.

"Maturity Date" means, with respect to each Loan, forty-eight (48) months from the first day of the month next following the month in which the Funding Date for such Loan occurs, or if earlier, the date of acceleration of such Loan following an Event of Default or the date of prepayment, whichever is applicable.

"Note" means each promissory note executed in connection with a Loan in substantially the form of Exhibit C attached hereto.

"Obligations" means all debt, principal, interest, fees, charges, expenses and attorneys' fees and costs and other amounts, obligations, covenants, and duties owing by Borrower to Collateral Agent or Lender of any kind and description (whether pursuant to or evidenced by the Loan Documents (other than the Warrants), or by any other agreement between Lender and Borrower (other than the Warrants), and whether or not for the payment of money), whether direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising, including all Lender's Expenses.

"OFAC" means the Office of Foreign Assets Control of the United States Department of the Treasury.

"Officer's Certificate" means a certificate executed by a Responsible Officer substantially in the form of Exhibit E or such other form as Lender may agree to accept.

"Payment Date" has the meaning given such term in Section 2.2(a) of this Agreement.

"Permitted Indebtedness" means and includes:

(a) Indebtedness of Borrower to Lender under the Loan Documents;

(b) Indebtedness arising from the endorsement of instruments in the ordinary course of business;

(c) Indebtedness of Borrower existing on the date hereof and set forth on the Disclosure Schedule;

(d) intercompany Indebtedness owed by any Subsidiary to Borrower or any wholly-owned Subsidiary, as applicable; *provided* that, if applicable, such Indebtedness is also permitted as a Permitted Investment and, in the case of such Indebtedness owed to Borrower, such Indebtedness shall be evidenced by one or more promissory notes; and

(e) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness under subsection (c) above; *provided* that the principal amount thereof is not increased or the terms thereof are not modified to impose materially more burdensome terms upon Borrower.

"Permitted Investments" means and includes any of the following Investments as to which Collateral Agent and Lender have a perfected security interest:

(a) Deposits and deposit accounts with commercial banks organized under the laws of the United States or a state thereof to the extent: (i) the deposit accounts of each such institution are insured by the Federal Deposit Insurance Corporation up to the legal limit; and (ii) each such institution has an aggregate capital and surplus of not less than One Hundred Million Dollars ($100,000,000);

(b) Investments in marketable obligations issued or fully guaranteed by the United States and maturing not more than one (1) year from the date of issuance;

(c) Investments in corporate Notes and/or Bonds rated at least "A2/A" or higher by a national credit rating agency and maturing not more than two (2) years from the creation thereof;

(d) Investments in open market commercial paper rated at least "A1" or "P1" or higher by a national credit rating agency and maturing not more than one (1) year from the creation thereof;

(e) Investments pursuant to or arising under currency agreements or interest rate agreements entered into in the ordinary course of business;

(f) Investments by Borrower and Subsidiaries in their Subsidiaries outstanding on the date hereof; and

(g) other Investments aggregating not in excess of One Hundred Thousand Dollars ($100,000) at any time.

"Permitted Liens" means and includes:

(a) the Liens created by this Agreement;

(b) Liens for fees, taxes, levies, imposts, duties or other governmental charges of any kind which are not yet delinquent or which are being contested in good faith by appropriate proceedings which suspend the collection thereof (*provided* that such appropriate proceedings do not involve any substantial danger of the sale, forfeiture or loss of any material item of Collateral which in the aggregate is material to Borrower and that Borrower has adequately bonded such Lien or reserves sufficient to discharge such Lien have been provided on the books of Borrower);

(c) Liens identified on the Disclosure Schedule;

(d) carriers', warehousemen's, mechanics', materialmen's, repairmen's or other similar Liens arising in the ordinary course of business and which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings (*provided* that such appropriate proceedings do not involve any substantial danger of the sale, forfeiture or loss of any material item of Collateral or Collateral which in the aggregate is material to Borrower and that Borrower has adequately bonded such Lien or reserves sufficient to discharge such Lien have been provided on the books of Borrower); and

(e) non-exclusive licenses of Intellectual Property entered into in the ordinary course of business.

"Person" means and includes any individual, any partnership, any corporation, any business trust, any joint stock company, any limited liability company, any unincorporated association or any other entity and any domestic or foreign national, state or local government, any political subdivision thereof, and any department, agency, authority or bureau of any of the foregoing.

"Property" means any interest in any kind of property or asset, whether real, personal or mixed, whether tangible or intangible.

"Responsible Officer" has the meaning given such term in Section 6.3 of this Agreement.

"Restricted License" means any license or other agreement with respect to which Borrower is the licensee and such license or agreement is material to Borrower's business and (a) that prohibits or otherwise restricts Borrower from granting a security interest in Borrower's interest in such license or agreement or any other property or (b) for which a default under or termination of could interfere with Collateral Agent's or Lender's right to sell any Collateral.

"Rights to Payment" has the meaning given such term in Section 4.1 of this Agreement.

"Sanctions" means any sanction administered or enforced by the United States Government (including, without limitation, OFAC and the United States Department of State), the United Nations Security Council, the European Union, Her Majesty's Treasury or other relevant sanctions authority.

"Scheduled Payments" has the meaning given such term in Section 2.2(a) of this Agreement.

"Solvent" has the meaning given such term in Section 5.12 of this Agreement.

"Subsidiary" means any corporation or other entity of which a majority of the outstanding Equity Securities entitled to vote for the election of directors or other governing body (otherwise than as the result of a default) is owned by Borrower directly or indirectly through Subsidiaries.

"Transfer" has the meaning given such term in Section 7.4 of this Agreement.

"Warrant" means the separate warrant or warrants dated on or about the date hereof in favor of each Lender or its designees to purchase securities of Borrower.

1.2 Construction. References in this Agreement to "Articles," "Sections," "Exhibits," "Schedules" and "Annexes" are to recitals, articles, sections, exhibits, schedules and annexes herein and hereto unless otherwise indicated. References in this Agreement and each of the other Loan Documents to any document, instrument or agreement shall include (a) all exhibits, schedules, annexes and other attachments thereto, (b) all documents, instruments or agreements issued or executed in replacement thereof, and (c) such document, instrument or agreement, or replacement or predecessor thereto, as amended, modified and supplemented from time to time and in effect at any given time (subject, in the case of clauses (b) and (c), to any restrictions on such replacement, amendment, modification or supplement set forth in the Loan Documents). The words "hereof," "herein" and "hereunder" and words of similar import when used in this Agreement or any other Loan Document shall refer to this Agreement or such other Loan Document, as the case may be, as a whole and not to any particular provision of this Agreement or such other Loan Document, as the case may be. The words "include" and "including" and words of similar import when used in this Agreement or any other Loan Document shall not be construed to be limiting or exclusive. Unless the context requires otherwise, any reference in this Agreement or any other Loan Document to any Person shall be construed to include such Person's successors and assigns. Unless otherwise indicated in this Agreement or any other Loan Document, all accounting terms used in this Agreement or any other Loan Document shall be construed, and all accounting and financial computations hereunder or thereunder shall be computed, in accordance with GAAP, and all terms describing Collateral shall be construed in accordance with the Code. The terms and information set forth on the cover page of this Agreement are incorporated into this Agreement.

2. Loans; Repayment.

2.1 Commitments.

(a) The Commitment Amounts. Subject to the terms and conditions of this Agreement and relying upon the representations and warranties herein set forth as and when made or deemed to be made, Horizon agrees to lend to Borrower prior to the Loan A Commitment Termination Date, Loan A, prior to the Loan B Commitment Termination Date, Loan B, prior to the Loan C Commitment Termination Date, Loan C and prior to the Loan D Commitment Termination Date, Loan D.

(b) The Loans and the Notes. The obligation of Borrower to repay the unpaid principal amount of and interest on each Loan shall be evidenced by a Note issued to the Lender.

2.2 Use of Proceeds. The proceeds of each Loan shall be used solely for working capital or general corporate purposes of Borrower.Payments.

(a) Scheduled Payments. Borrower shall make (i) a payment of accrued interest only to Lender on the outstanding principal amount of each Loan on the first twenty-four (24) Payment Dates specified in the Note applicable to such Loan and (ii) an equal payment of principal plus accrued interest to Lender on the outstanding principal amount of each Loan on the next twenty-four (24) Payment Dates as set forth in the Note applicable to such Loan (collectively, the "Scheduled Payments"). Borrower shall make such Scheduled Payments commencing on the date set forth in the Note applicable to such Loan and continuing thereafter on the first Business Day of each calendar month (each a "Payment Date") through the Maturity Date. In any event, all unpaid principal and accrued interest shall be due and payable in full on the Maturity Date applicable to such Loan.

(b) Interim Payment. Unless the Funding Date for a Loan is the first day of a calendar month, Borrower shall pay the per diem interest (accruing at the Loan Rate from the Funding Date through the last day of that month) payable with respect to such Loan on the first Business Day of the next calendar month.

(c) Payment of Interest. Borrower shall pay interest on each Loan at a per annum rate of interest equal to the Loan Rate. The Loan Rate shall initially be calculated using the LIBOR Rate reported in the Wall Street Journal on the date which is five (5) Business Days prior to the proposed date of disbursement of the Loan, but shall thereafter be calculated for each calendar month using the LIBOR Rate reported in the Wall Street Journal on the first calendar day of such month, provided, however, that if the first calendar day of any month is not a Business Day, the Loan Rate shall be calculated using the LIBOR Rate reported in the Wall Street Journal on the Business Day immediately preceding the first calendar day of such month. Interest (including interest at the Default Rate, if applicable) shall be computed on the basis of a 360-day year for the actual number of days elapsed. Notwithstanding any other provision hereof, the amount of interest payable hereunder shall not in any event exceed the maximum amount permitted by the law applicable to interest charged on commercial loans.

(d) Application of Payments. All payments received by Lender prior to an Event of Default shall be applied as follows: (i) first, to Lender's Expenses then due and owing; and (ii) second, ratably, to all Scheduled Payments then due and owing (*provided*, however, if such payments are not sufficient to pay the whole amount then due, such payments shall be applied first to unpaid interest at the Loan Rate, then to the remaining amounts then due). After an Event of Default, all payments and application of proceeds shall be made as set forth in Section 9.7.

(e) Late Payment Fee. Borrower shall pay to Lender a late payment fee equal to six percent (6%) of any Scheduled Payment not paid when due to such Lender.

(f) Default Rate. Borrower shall pay interest at a per annum rate equal to the Default Rate on any amounts required to be paid by Borrower to Collateral Agent or Lender under this Agreement or the other Loan Documents (including Scheduled Payments), payable with respect to any Loan, accrued and unpaid interest, and any fees or other amounts which remain unpaid after such amounts are due. If an Event of Default has occurred and the Obligations have been accelerated (whether automatically or by Lender's election), Borrower shall pay interest on the aggregate, outstanding accelerated balance hereunder from the date of the Event of Default until all Events of Default are cured, at a per annum rate equal to the Default Rate.

(g) Final Payment.

(i) Loan A Final Payment. Borrower shall pay to Horizon a payment in the amount of One Hundred Thousand Dollars ($100,000) (the "Loan A Final Payment") upon the earlier of (A) payment in full of the principal balance of Loan A, (B) an Event of Default and demand by Horizon of payment in full of Loan A or (C) the Maturity Date, as applicable.

(ii) Loan B Final Payment. Borrower shall pay to Horizon a payment in the amount of One Hundred Thousand Dollars ($100,000) (the "Loan B Final Payment") upon the earlier of (A) payment in full of the principal balance of Loan B, (B) an Event of Default and demand by Horizon of payment in full of Loan B or (C) the Maturity Date, as applicable.

(iii) Loan C Final Payment. Borrower shall pay to Horizon a payment in the amount of One Hundred Thousand Dollars ($100,000) (the "Loan C Final Payment") upon the earlier of (A) payment in full of the principal balance of Loan C, (B) an Event of Default and demand by Horizon of payment in full of Loan C or (C) the Maturity Date, as applicable.

(iv) Loan D Final Payment. Borrower shall pay to Horizon a payment in the amount of One Hundred Thousand Dollars ($100,000) (the "Loan D Final Payment") upon the earlier of (A) payment in full of the principal balance of Loan D, (B) an Event of Default and demand by Horizon of payment in full of Loan D or (C) the Maturity Date, as applicable.

2.3 Prepayments.

(a) Mandatory Prepayment Upon an Acceleration. If the Loans are accelerated following the occurrence of an Event of Default pursuant to Section 9.1(a) hereof, then Borrower, in addition to any other amounts which may be due and owing hereunder, shall immediately pay to Lender the amount set forth in Section 2.3(b) below, as if Borrower had opted to prepay on the date of such acceleration.

(b) Optional Prepayment. Upon ten (10) Business Days' prior written notice to Lender, Borrower may, at its option, at any time, prepay all (and not less than all) of the outstanding Loans by simultaneously paying to Lender an amount equal to (i) any accrued and unpaid interest on the outstanding principal balance of the Loans; *plus* (ii) an amount equal to (A) if such Loan is prepaid on or before the Loan Amortization Date applicable to such Loan, three percent (3%) of the then outstanding principal balance of such Loan, (B) if such Loan is prepaid after the Loan Amortization Date applicable to such Loan, but on or before the date that is twelve (12) months from such Loan Amortization Date, two percent (2%) of the then outstanding principal balance of such Loan, or (C) if such Loan is prepaid more than twelve (12) months from the Loan Amortization Date applicable to such Loan, one percent (1%) of the then outstanding principal balance of such Loan; *plus* (iii) the outstanding principal balance of such Loan; *plus* (iv) all other sums, if any, that shall have become due and payable hereunder.

2.4 Other Payment Terms.

(a) Place and Manner. Borrower shall make all payments due to Lender in lawful money of the United States. All payments of principal, interest, fees and other amounts payable by Borrower hereunder shall be made, in immediately available funds, not later than 10:00 a.m. Connecticut time, on the date on which such payment is due. Borrower shall make such payments to Lender via wire transfer or ACH as instructed by Lender from time to time.

(b) Date. Whenever any payment is due hereunder on a day other than a Business Day, such payment shall be made on the next succeeding Business Day, and such extension of time shall be included in the computation of interest or fees, as the case may be.

(c) Taxes.

(i) Unless otherwise required under applicable law, any and all payments made hereunder or under the Notes shall be made free and clear of and without deduction for any taxes; *provided* that if Borrower shall be required to deduct any taxes from such payments, then (A) the sum payable shall be increased as necessary so that after making all required deductions (including deductions applicable to additional sums payable under this Section 2.4(c)) the Lender receives an amount equal to the sum it would have received had no such deductions been made, (B) Borrower shall make such deductions and (C) Borrower shall pay the full amount deducted to the relevant Governmental Authority in accordance with applicable law.

(ii) Borrower shall indemnify Lender, within 10 days after written demand therefor, for the full amount of any taxes imposed or asserted directly on Lender by any Governmental Authority on or attributable to amounts payable under this Agreement solely as a result of Lender entering into this Agreement to the extent such taxes are paid by Lender, and any penalties, interest and reasonable expenses arising therefrom or with respect thereto, whether or not such taxes were correctly or legally imposed or asserted by the relevant Governmental Authority; *provided*, however, that such indemnified taxes shall not include income or franchise taxes imposed on (or measured by) Lender's net income by the jurisdiction, or any political subdivision thereof or taxing authority therein, under the laws of which such recipient is organized or in which its principal office is located or in which its applicable lending office is located. A certificate as to the amount of such payment or liability delivered to Borrower by Lender shall be conclusive absent manifest error.

(iii) As soon as practicable after any payment of taxes by Borrower hereunder to a Governmental Authority, Borrower shall deliver to Lender the original or a certified copy of a receipt issued by such Governmental Authority evidencing such payment, a copy of the return reporting such payment or other evidence of such payment reasonably satisfactory to Lender.

(iv) If Lender is entitled to an exemption from or reduction of withholding tax under the law of the jurisdiction in which Borrower is located, or any treaty to which such jurisdiction is a party, with respect to payments under this Agreement, Lender shall deliver to Borrower, as reasonably requested by Borrower, such properly completed and executed documentation prescribed by applicable law as will permit such payments to be made without withholding or at a reduced rate.

(v) If Lender receives a refund in respect of taxes paid by Borrower pursuant to this Section 2.4(c), which in the sole discretion of Lender exercised in good faith is allocable to such payment, it shall promptly pay such refund, together with any other amounts paid by Borrower in connection with such refunded taxes, to Borrower, net of all out-of-pocket expenses (including any taxes to which Lender has become subject as a result of its receipt of such refund) of Lender incurred in obtaining such refund and without interest (other than any interest paid by the relevant Governmental Authority with respect to such refund); *provided* that Borrower, upon the request of the Lender, shall repay to Lender amounts paid over pursuant to the preceding clause (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) in the event that Lender is required to repay such refund to such Governmental Authority. Notwithstanding anything to the contrary in this paragraph (v), in no event will Lender be required to pay any amount to Borrower pursuant to this paragraph (v) the payment of which would place Lender in a less favorable net after-tax position than Lender would have been in if the indemnification payments or additional amounts giving rise to such refund had never been paid. This paragraph shall not be construed to require Lender to make available its tax returns (or any other information relating to its taxes that it deems confidential) to Borrower or any other Person.

2.5 Procedure for Making the Loans.

(a) Notice. Borrower shall notify Lender of the date on which Borrower desires Lender to make any Loan at least five (5) Business Days in advance of the desired Funding Date, unless the Lender elects at its sole discretion to allow the Funding Date for a Loan to be made by Lender to be within five (5) Business Days of Borrower's notice. Borrower's execution and delivery to Lender of one or more Notes in respect of a Loan shall be Borrower's agreement to the terms and calculations thereunder with respect to such Loan. Lender's obligation to make any Loan shall be expressly subject to the satisfaction of the conditions set forth in Section 3.

(b) Loan Rate Calculation. Prior to each Funding Date for any Loan, Lender shall establish the Loan Rate with respect to such Loan, which shall be set forth in the Note to be executed by Borrower with respect to such Loan and shall be conclusive in the absence of a manifest error.

(c) Disbursement. Lender shall disburse the proceeds of each Loan by wire transfer to Borrower at the account specified in the Funding Certificate for such Loan.

2.6 Good Faith Deposit; Legal and Closing Expenses; and Commitment Fee.

(a) Good Faith Deposit. Borrower has delivered to Horizon a good faith deposit in the amount of Fifty Thousand Dollars ($50,000) (the "Good Faith Deposit"). The Good Faith Deposit paid to Horizon will be credited to the Commitment Fee payable to the Lender. If the Funding Date does not occur, Lender shall retain the Good Faith Deposit as compensation for its time, expenses and opportunity cost.

(b) Legal, Due Diligence and Documentation Expenses. Concurrently with its execution and delivery of this Agreement, Borrower shall pay to Lender all of Lender's reasonable legal, due diligence and documentation expenses in connection with the negotiation and documentation of this Agreement and the Loan Documents.

(c) Commitment Fee. Borrower shall pay, concurrently with its execution and delivery of this Agreement, a commitment fee to Horizon in the amount of One Hundred Thousand Dollars ($100,000) (the "Commitment Fee"). The Commitment Fee shall be retained by the Lender and be deemed fully earned upon receipt.

3. Conditions of Loan.

3.1 Conditions Precedent to Closing. At the time of the execution and delivery of this Agreement, Lender shall have received, in form and substance reasonably satisfactory to Lender, all of the following (unless Lender has agreed to waive such condition or document, in which case such condition or document shall be a condition precedent to the making of any Loan and shall be deemed added to Section 3.2):

(a) Loan Agreement. This Agreement duly executed by Borrower, Collateral Agent and Lender.

(b) Warrants. The Warrants duly executed by Borrower.

(c) Secretary's Certificate. A certificate of the secretary or assistant secretary of Borrower, dated as of the date hereof, with copies of the following documents attached: (i) the certificate of incorporation and bylaws (or equivalent documents) of Borrower certified by Borrower as being complete and in full force and effect on the date thereof, (ii) incumbency and representative signatures, and (iii) resolutions authorizing the execution and delivery of this Agreement and each of the other Loan Documents.

(d) Good Standing Certificates. A good standing certificate from Borrower's state of organization and the state in which Borrower's principal place of business is located, each dated as of a date no earlier than thirty (30) days prior to the date hereof.

(e) Certificate of Insurance. Evidence of the insurance coverage required by Section 6.8 of this Agreement.

(f) Consents. All necessary consents of shareholders and other third parties with respect to the execution, delivery and performance of this Agreement, the Warrants and the other Loan Documents.

(g) Legal Opinion. A legal opinion of Borrower's counsel, dated as of the date hereof, covering the matters set forth in Exhibit D hereto.

(h) Account Control Agreements. Account Control Agreements for all of Borrower's deposit accounts and securities accounts duly executed by all of the parties thereto.

(i) Fees and Expenses. Payment of all fees and expenses then due hereunder or under any other Loan Document.

(j) Other Documents. Such other documents and completion of such other matters, as Lender may reasonably deem necessary or appropriate.

3.2 Conditions Precedent to Making Loan A, Loan B, Loan C and Loan D. The obligation of Lender to make Loan A, Loan B, Loan C or Loan D is further subject to satisfaction of the following conditions as of the applicable Funding Date:

(a) No Default. No Default or Event of Default shall have occurred and be continuing.

(b) Landlord Agreements. Borrower shall have provided Lender with a Landlord Agreement for each location where Borrower's books and records and the Collateral is located (unless Borrower is the fee owner thereof).

(c) Note. Borrower shall have duly executed and delivered a Note in the amount of each of Loan A, Loan B, Loan C and Loan D to Horizon.

(d) UCC Financing Statements. Lender shall have received such documents, instruments and agreements, including UCC financing statements or amendments to UCC financing statements and UCC financing statement searches, as Lender shall reasonably request to evidence the perfection and priority of the security interests granted to Collateral Agent and Lender pursuant to Section 4. Borrower authorizes Collateral Agent and Lender to file any UCC financing statements, continuations of or amendments to UCC financing statements they deem necessary to perfect its security interest in the Collateral.

(e) Funding Certificate. Borrower shall have duly executed and delivered to Lender a Funding Certificate for such Loans.

(f) Representations and Warranties. The representations and warranties made by Borrower in Section 5 and in the other Loan Documents shall be true and correct as of such Funding Date.

(g) Other Documents. Borrower shall have provided Lender with such other documents and completion of such other matters, as Lender may reasonably deem necessary or appropriate.

3.3 Covenant to Deliver. Borrower agrees (not as a condition but as a covenant) to deliver to Lender each item required to be delivered to Lender as a condition to each Loan, if such Loan is advanced. Borrower expressly agrees that the extension of any Loan prior to the receipt by Lender of any such item shall not constitute a waiver by Lender of Borrower's obligation to deliver such item, and any such extension in the absence of a required item shall be in Lender's sole discretion.

4. Creation of Security Interest.

4.1 Grant of Security Interests. Borrower grants to Collateral Agent and Lender a valid, continuing security interest in all presently existing and hereafter acquired or arising Collateral in order to secure prompt, full and complete payment of any and all Obligations and in order to secure prompt, full and complete performance by Borrower of each of its covenants and duties under each of the Loan Documents (other than the Warrants). The "Collateral" shall mean and include all right, title, interest, claims and demands of Borrower in the following:

(a) All goods (and embedded computer programs and supporting information included within the definition of "goods" under the Code) and equipment now owned or hereafter acquired, including all laboratory equipment, computer equipment, office equipment, machinery, fixtures, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing, and all attachments, accessories, accessions, replacements, substitutions, additions, and improvements to any of the foregoing, wherever located;

(b) All inventory now owned or hereafter acquired, including all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products including such inventory as is temporarily out of Borrower's custody or possession or in transit and including any returns upon any accounts or other proceeds, including insurance proceeds, resulting from the sale or disposition of any of the foregoing and any documents of title representing any of the above, and Borrower's books relating to any of the foregoing;

(c) All contract rights and general intangibles (except to the extent included within the definition of Intellectual Property), now owned or hereafter acquired, including goodwill, license agreements, franchise agreements, blueprints, drawings, purchase orders, customer lists, route lists, infringements, claims, software, computer programs, computer disks, computer tapes, literature, reports, catalogs, design rights, income tax refunds, payment intangibles, commercial tort claims, payments of insurance and rights to payment of any kind;

(d) All now existing and hereafter arising accounts, contract rights, royalties, license rights, license fees and all other forms of obligations owing to Borrower arising out of the sale or lease of goods, the licensing of technology or the rendering of services by Borrower (subject, in each case, to the contractual rights of third parties to require funds received by Borrower to be expended in a particular manner), whether or not earned by performance, and any and all credit insurance, guaranties, and other security therefor, as well as all merchandise returned to or reclaimed by Borrower and Borrower's books relating to any of the foregoing;

(e) All documents, cash, deposit accounts, letters of credit and letters of credit rights (whether or not the letter of credit is evidenced by a writing) and other supporting obligations, certificates of deposit, instruments, promissory notes, chattel paper (whether tangible or electronic) and investment property, including all securities, whether certificated or uncertificated, security entitlements, securities accounts, commodity contracts and commodity accounts, and all financial assets held in any securities account or otherwise, wherever located, now owned or hereafter acquired and Borrower's books relating to the foregoing; and

(f) To the extent not covered by clauses (a) through (e), all other personal property of the Borrower, whether tangible or intangible, and any and all rights and interests in any of the above and the foregoing and, any and all claims, rights and interests in any of the above and all substitutions for, additions and accessions to and proceeds thereof, including insurance, condemnation, requisition or similar payments and proceeds of the sale or licensing of Intellectual Property to the extent such proceeds no longer constitute Intellectual Property; but

Notwithstanding the foregoing, the Collateral shall not include any Intellectual Property; *provided*, *however*, that the Collateral shall include all accounts receivables, accounts, and general intangibles that consist of rights to payment and proceeds from the sale, licensing or disposition of all or any part, or rights in, the foregoing (the "Rights to Payment"). Notwithstanding the foregoing, if a judicial authority (including a U.S. Bankruptcy Court) holds that a security interest in the underlying Intellectual Property is necessary to have a security interest in the Rights to Payment, then the Collateral shall automatically, and effective as of the date hereof, include the Intellectual Property to the extent necessary to permit perfection of Lender's security interest in the Rights to Payment.

Notwithstanding the foregoing, if (i) Borrower's Phase III clinical trial entitled "Study of ThermoDox With Standardized Radiofrequency Ablation (RFA) for Treatment of Hepatocellular Carcinoma (HCC) (OPTIMA)" does not meet the final primary endpoints for such trial (which endpoints are set forth on the United States National Library of Medicine clinical trial tracking website located at www.clinicaltrials.gov, under Identifier NCT02112656) or (ii) the United States Food and Drug Administration states that such clinical trial shall be discontinued, then, (A) Borrower grants and pledges to Collateral Agent and Lenders a continuing security interest in all of Borrower's then owned and thereafter arising Intellectual Property in order to secure prompt payment of any and all Obligations and in order to secure prompt performance by Borrower of each of its covenants and duties under the Loan Documents, (B) the definition of "Collateral" shall be amended, automatically and immediately, without any further action or writing required by the parties such that all of Borrower's Intellectual Property then owned and thereafter arising or acquired becomes part of the Collateral for all purposes of the Loan Agreement, (C) Collateral Agent and Lenders shall be authorized to file an amendment to their UCC-1 financing statements to reflect the inclusion of the Intellectual Property within the description of the Collateral as well as appropriate documentation with the United Stated Patent and Trademark Office to evidence such security interest and (D) Borrower shall execute and deliver, at Borrower's sole cost and expense, all documents and instruments reasonably necessary to perfect such security interest, including, but not limited to, intellectual property security agreements.

4.2 After-Acquired Property. If Borrower shall at any time acquire a commercial tort claim, as defined in the Code, Borrower shall immediately notify Collateral Agent and Lender in writing signed by Borrower of the brief details thereof and grant to Collateral Agent and Lender in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance satisfactory to Collateral Agent and Lender.

4.3 Duration of Security Interest. Collateral Agent's and Lender's security interest in the Collateral shall continue until the indefeasible payment in full and the satisfaction of all Obligations, and termination of Lender's commitment to fund the Loans, whereupon such security interest shall terminate. Collateral Agent and Lender shall, at Borrower's sole cost and expense, execute such further documents and take such further actions as may be reasonably necessary to make effective the release contemplated by this Section 4.3, including duly authorizing and delivering termination statements for filing in all relevant jurisdictions under the Code.

4.4 Location and Possession of Collateral. The Collateral is and shall remain in the possession of Borrower at its location listed on the cover page hereof or as set forth in the Disclosure Schedule. Borrower shall remain in full possession, enjoyment and control of the Collateral (except only as may be otherwise required by Collateral Agent or Lender for perfection of the security interests therein created hereunder) and so long as no Event of Default has occurred, shall be entitled to manage, operate and use the same and each part thereof with the rights and franchises appertaining thereto; *provided* that the possession, enjoyment, control and use of the Collateral shall at all times be subject to the observance and performance of the terms of this Agreement.

4.5 Delivery of Additional Documentation Required. Borrower shall from time to time execute and deliver to Collateral Agent and Lender, at the request of Collateral Agent or Lender, all financing statements and other documents Collateral Agent or Lender may reasonably request, in form satisfactory to Collateral Agent and Lender, to perfect and continue Collateral Agent's and Lender's perfected security interests in the Collateral and in order to consummate fully all of the transactions contemplated under the Loan Documents.

4.6 Right to Inspect. Collateral Agent and Lender (through any of their officers, employees, or agents) shall have the right, upon reasonable prior notice, from time to time during Borrower's usual business hours, to inspect the books and records of Borrower and Subsidiaries and to make copies thereof and to inspect, test, and appraise the Collateral in order to verify Borrower's financial condition or the amount, condition of, or any other matter relating to, the Collateral. Any inspection, test or appraisal conducted hereunder shall be conducted at the sole cost and expense of Borrower.

4.7 Intellectual Property.

(a) At Lender's request, Borrower shall register or cause to be registered with the United States Copyright Office (i) any software (material to the business of Borrower) developed or acquired by Borrower in connection with any product developed or acquired for sale or licensing, (ii) any software (material to the business of Borrower) developed or acquired by Borrower hereafter from time to time in connection with any product developed or acquired for sale or licensing, and (iii) any major revisions or upgrades to any software that has previously been registered by or on behalf of Borrower with the United States Copyright Office.

(b) Borrower shall promptly notify Lender on or before the federal registration or filing by Borrower of any patent or patent application, or trademark or trademark application, or copyright or copyright application and shall promptly execute and deliver to Lender any grants of security interests in same, in form acceptable to Lender, to file with the United States Patent and Trademark Office or the United States Copyright Office, as applicable.

4.8 Protection of Intellectual Property. Borrower shall:

(a) protect, defend and maintain the validity and enforceability of its Intellectual Property and promptly advise Collateral Agent in writing of material infringements;

(b) not allow any Intellectual Property material to Borrower's business to be abandoned, forfeited or dedicated to the public without Lender's written consent;

(c) provide written notice to Collateral Agent within ten (10) days of entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public); and

(d) take such commercially reasonable steps as Collateral Agent or Lender requests to obtain the consent of, or waiver by, any person whose consent or waiver is necessary for (i) any Restricted License to be deemed "Collateral" and for Collateral Agent and Lender to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, whether now existing or entered into in the future, and (ii) Collateral Agent and Lender to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Collateral Agent's or Lender's rights and remedies under this Agreement and the other Loan Documents.

5. Representations and Warranties. Except as set forth in the Disclosure Schedule, Borrower represents and warrants as follows:

5.1 Organization and Qualification. Each of Borrower and its Subsidiaries is a corporation duly organized and validly existing under the laws of its state of incorporation and qualified and licensed to do business in, and is in good standing in, any jurisdiction in which the conduct of its business or its ownership of Property requires that it be so qualified and licensed or in which the Collateral is located, except for such states as to which any failure to so qualify would not have a Material Adverse Effect.

5.2 Authority. Borrower has all necessary power and authority to execute, deliver, and perform in accordance with the terms thereof, the Loan Documents to which it is a party. Borrower and Subsidiaries have all requisite power and authority to own and operate their Property and to carry on their businesses as now conducted. Borrower and Subsidiaries have obtained all licenses, permits, approvals and other authorizations necessary for the operation of their business.

5.3 Conflict with Other Instruments, etc. Neither the execution and delivery of any Loan Document to which Borrower is a party nor the consummation of the transactions therein contemplated nor compliance with the terms, conditions and provisions thereof will conflict with or result in a breach of any of the terms, conditions or provisions of the certificate of incorporation, the by-laws, or any other organizational documents of Borrower or any law or any regulation, order, writ, injunction or decree of any court or Governmental Authority by which Borrower or any Subsidiary or any of their respective property or assets may be bound or affected or any material agreement or instrument to which Borrower is a party or by which it or any of its Property is bound or to which it or any of its Property is subject, or constitute a default thereunder or result in the creation or imposition of any Lien, other than Permitted Liens.

5.4 Authorization; Enforceability. The execution and delivery of this Agreement, the granting of the security interest in the Collateral, the incurrence of the Loans, the execution and delivery of the other Loan Documents to which Borrower is a party and the consummation of the transactions herein and therein contemplated have each been duly authorized by all necessary action on the part of Borrower. No authorization, consent, approval, license or exemption of, and no registration, qualification, designation, declaration or filing with, or notice to, any Person is, was or will be necessary to (a) the valid execution and delivery of any Loan Document to which Borrower is a party, (b) the performance of Borrower's obligations under any Loan Document or (c) the granting of the security interest in the Collateral, except for filings in connection with the perfection of the security interest in any of the Collateral or the issuance of the Warrants. The Loan Documents have been duly executed and delivered and constitute legal, valid and binding obligations of Borrower, enforceable in accordance with their respective terms, except as the enforceability thereof may be limited by bankruptcy, insolvency or other similar laws of general application relating to or affecting the enforcement of creditors' rights or by general principles of equity.

5.5 No Prior Encumbrances. Borrower has good and marketable title to the Collateral, free and clear of Liens except for Permitted Liens. Borrower has good title and ownership of, or is licensed under, all of Borrower's current Intellectual Property. Borrower is the sole owner of the Intellectual Property which it owns or purports to own except for (a) non-exclusive licenses granted to its customers, resellers and/or distributors in the ordinary course of business, (b) over-the-counter software that is commercially available to the public and (c) material Intellectual Property licensed to Borrower and noted on the Disclosure Schedule. Each patent which it owns or purports to own and which is material to Borrower's business is valid and enforceable, and no part of the Intellectual Property which Borrower owns or purports to own and which is material to Borrower's business has been judged invalid or unenforceable, in whole or in part. Except as noted on the Disclosure Schedule, Borrower is not a party to, nor is it bound by, any Restricted License. Borrower has not received any communications alleging that Borrower has violated, or by conducting its business as proposed, would violate any proprietary rights of any other Person. Borrower has no knowledge of any infringement or violation by it of the intellectual property rights of any third party and has no knowledge of any violation or infringement by a third party of any of its Intellectual Property. The Collateral and the Intellectual Property constitute substantially all of the assets and property of Borrower, and Borrower owns all Intellectual Property associated with the business of Borrower and Subsidiaries, free and clear of any liens other than Permitted Liens.

5.6 Security Interest. The provisions of this Agreement create legal and valid security interests in the Collateral in favor of Collateral Agent and Lender, and, assuming the proper filing of one or more financing statement(s) identifying the Collateral with the proper state and/or local authorities and the taking of any other actions necessary to perfect a security interest in the Collateral under the Code, the security interests in the Collateral granted to Collateral Agent and Lender pursuant to this Agreement (a) constitute and will continue to constitute first priority security interests (except to the extent any Permitted Liens may have a superior priority to Collateral Agent's and Lender's Liens under this Agreement) and (b) are and will continue to be superior and prior to the rights of all other creditors of Borrower (except to the extent any Permitted Liens may have a superior priority to Collateral Agent's and Lender's Liens under this Agreement).

5.7 Name; Location of Chief Executive Office, Principal Place of Business and Collateral. Borrower has not done business under any name other than that specified on the signature page hereof. Borrower's jurisdiction of incorporation, chief executive office, principal place of business, and the place where Borrower maintains its records concerning the Collateral are presently located in the state and at the address set forth on the cover page of this Agreement. The Collateral is presently located at the address set forth on the cover page hereof or as set forth in the Disclosure Schedule.

5.8 Litigation. There are no actions or proceedings pending by or against Borrower or any Subsidiary before any court, arbitral tribunal, regulatory organization, administrative agency or similar body in which an adverse decision could have a Material Adverse Effect. Borrower does not have knowledge of any such pending or threatened actions or proceedings.

5.9 Financial Statements. All financial statements relating to Borrower, any Subsidiary or any Affiliate that have been or may hereafter be delivered by Borrower to Collateral Agent or Lender present fairly in all material respects Borrower's Consolidated financial condition as of the date thereof and Borrower's Consolidated results of operations for the period then ended.

5.10 No Material Adverse Effect. No event has occurred and no condition exists which could reasonably be expected to have a Material Adverse Effect since December 31, 2017.

5.11 Full Disclosure. No representation, warranty or other statement made by Borrower in any Loan Document (including the Disclosure Schedule), certificate or written statement furnished to Collateral Agent or Lender contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements contained in such certificates or statements not misleading. There is no fact known to Borrower which materially adversely affects, or which could in the future be reasonably expected to materially adversely affect, its ability to perform its obligations under this Agreement.

5.12 Solvency, Etc. Borrower is Solvent (as defined below) and, after the execution and delivery of the Loan Documents and the consummation of the transactions contemplated thereby, Borrower will be Solvent. "Solvent" means, with respect to any Person on any date, that on such date (a) the fair value of the property of such Person is greater than the fair value of the liabilities (including contingent liabilities) of such Person, (b) the present fair saleable value of the assets of such Person is not less than the amount that will be required to pay the probable liability of such Person on its debts as they become absolute and matured, (c) such Person does not intend to, and does not believe that it will, incur debts or liabilities beyond such Person's ability to pay as such debts and liabilities mature and (d) such Person is not engaged in business or a transaction, and is not about to engage in business or a transaction, for which such Person's property would constitute an unreasonably small capital.

5.13 Subsidiaries. Borrower has no Subsidiaries.

5.14 Capitalization. All issued and outstanding Equity Securities of Borrower are duly authorized and validly issued, fully paid and non-assessable, and such securities were issued in compliance with all applicable state and federal laws concerning the issuance of securities, except for such compliance with such laws that would not reasonably be expected to result in a Material Adverse Effect.

5.15 Catastrophic Events; Labor Disputes. None of Borrower, any Subsidiary or any of their respective Property is or has been affected by any fire, explosion, accident, strike, lockout or other labor dispute, drought, storm, hail, earthquake, embargo, act of God or other casualty that could reasonably be expected to have a Material Adverse Effect. There are no disputes presently subject to grievance procedure, arbitration or litigation under any of the collective bargaining agreements, employment contracts or employee welfare or incentive plans to which Borrower or any Subsidiary is a party, and there are no strikes, lockouts, work stoppages or slowdowns, or, to the knowledge of Borrower, jurisdictional disputes or organizing activity occurring or threatened which could reasonably be expected to have a Material Adverse Effect.

5.16 Certain Agreements of Officers, Employees and Consultants.

(a) No Violation. To the knowledge of Borrower, no officer, employee or consultant of Borrower is, or is now expected to be, in violation of any term of any employment contract, proprietary information agreement, nondisclosure agreement, noncompetition agreement or any other material contract or agreement or any restrictive covenant relating to the right of any such officer, employee or consultant to be employed by Borrower because of the nature of the business conducted or to be conducted by Borrower or relating to the use of trade secrets or proprietary information of others, and to Borrower's knowledge, the continued employment of Borrower's officers, employees and consultants does not subject Borrower to any material liability for any claim or claims arising out of or in connection with any such contract, agreement, or covenant.

(b) No Present Intention to Terminate. To the knowledge of Borrower, no officer of Borrower, and no employee or consultant of Borrower whose termination, either individually or in the aggregate, could reasonably be expected to have a Material Adverse Effect, has any present intention of terminating his or her employment or consulting relationship with Borrower.

5.17 No Plan Assets. Neither Borrower nor any Subsidiary is an "employee benefit plan," as defined in Section 3(3) of ERISA, subject to Title I of ERISA, and none of the assets of Borrower or any Subsidiary constitutes or will constitute "plan assets" of one or more such plans within the meaning of 29 C.F.R. Section 2510.3-101. In addition, (a) neither Borrower nor any Subsidiary is a "governmental plan" within the meaning of Section 3(32) of ERISA and (b) transactions by or with Borrower or any Subsidiary are not subject to state statutes regulating investment of, and fiduciary obligations with respect to, governmental plans similar to the provisions of Section 406 of ERISA or Section 4975 of the Internal Revenue Code currently in effect, which prohibit or otherwise restrict the transactions contemplated by this Loan Agreement.

5.18 Sanctions, Etc. None of Borrower, any of its Subsidiaries or, any director, officer, employee, agent or Affiliate of Borrower or any of its Subsidiaries, is a Person that is, or is owned or controlled by Persons that are, (a) the subject or target of any Sanctions or (b) located, organized or resident in a country or territory that is, or whose government is, the subject of Sanctions. To the best of Borrower's knowledge, as of the date hereof and at all times throughout the term of this Agreement, including after giving effect to any transfers of interests permitted pursuant to the Loan Documents, none of the funds of Borrower, any Subsidiary or of their Affiliates have been (or will be) derived from any unlawful activity with the result that the investment in the respective party (whether directly or indirectly), is prohibited by applicable law or the Loans are in violation of applicable law.

5.19 Regulatory Compliance. Borrower is not a "bank holding company" or a direct or indirect subsidiary of a "bank holding company" as defined in the Bank Holding Company Act of 1956, as amended, and Regulation Y thereunder of the Board of Governors of the Federal Reserve System. Neither Borrower nor any Subsidiary is an "investment company" or a company controlled by an "investment company" under the Investment Company Act of 1940. Borrower is not engaged in the business of extending credit for the purpose of purchasing or carrying margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System) and no proceeds of any Loan will be used to purchase or carry margin stock or to extend credit to others for the purpose of purchasing or carrying any margin stock.

5.20 Payment of Taxes. All federal and other material tax returns, reports and statements (including any attachments thereto or amendments thereof) of Borrower and its Subsidiaries filed or required to be filed by any of them have been timely filed (or extensions have been obtained and such extensions have not expired) and all taxes shown on such tax returns or otherwise due and payable and all assessments, fees and other governmental charges upon Borrower, its Subsidiaries and their respective properties, assets, income, businesses and franchises which are due and payable have been paid when due and payable, except for the payment of any such taxes, assessments, fees and other governmental charges which are being diligently contested by Borrower in good faith by appropriate proceedings and for which adequate reserves have been made under GAAP. To the knowledge of Borrower, no tax return of Borrower or any Subsidiary is currently under an audit or examination, and Borrower has not received written notice of any proposed audit or examination, in each case, where a material amount of tax is at issue. Borrower is not an "S corporation" within the meaning of Section 1361(a)(1) of the Internal Revenue Code of 1986, as amended (the "Internal Revenue Code").

5.21 Anti-Terrorism Laws. Borrower will not, directly or indirectly, use the proceeds of the Loans, or lend, contribute or otherwise make available such proceeds to any Subsidiary, joint venture partner or other Person, (i) to fund any activities or business of or with any Person, or in any country or territory, that, at the time of such funding, is, or whose government is, the subject of Sanctions, or (ii) in any other manner that would result in a violation of Sanctions by any Person (including any Person participating in the Loans, whether as lender, underwriter, advisor, investor or otherwise). Lender hereby notifies Borrower that pursuant to the requirements of Anti-Terrorism Laws, and Lender's policies and practices, Lender is required to obtain, verify and record certain information and documentation that identifies Borrower and its principals, which information includes the name and address of Borrower and its principals and such other information that will allow Lender to identify such party in accordance with Anti-Terrorism Laws.

6. Affirmative Covenants. Borrower, until the full and complete payment of the Obligations, covenants and agrees that:

6.1 Good Standing. Borrower shall maintain, and cause each of its Subsidiaries to maintain, its corporate existence and its good standing in its jurisdiction of incorporation and maintain qualification in each jurisdiction in which the failure to so qualify could reasonably be expected to have a Material Adverse Effect. Borrower shall maintain, and cause each of its Subsidiaries to maintain, in force all licenses, approvals and agreements, the loss of which could reasonably be expected to have a Material Adverse Effect.

6.2 Government Compliance. Borrower shall comply, and cause each of its Subsidiaries to comply, with all statutes, laws, ordinances and government rules and regulations to which it is subject, noncompliance with which could reasonably be expected to have a Material Adverse Effect.

6.3 Financial Statements, Reports, Certificates. Borrower shall deliver to Lender: (a) as soon as available, but in any event within forty-five (45) days after the end of each fiscal quarter, a Borrower prepared Consolidated balance sheet, Consolidated income statement and Consolidated cash flow statement covering Borrower's operations during such period, certified by Borrower's president, treasurer or chief financial officer (each, a "Responsible Officer"); (b) as soon as available, but in any event within one hundred eighty (180) days after the end of Borrower's fiscal year, audited Consolidated financial statements of Borrower prepared in accordance with GAAP, together with an unqualified opinion on such financial statements of a nationally recognized or other independent public accounting firm reasonably acceptable to Lender; and (c) as soon as available, but in any event within thirty (30) days after the earlier of (i) the end of Borrower's fiscal year or (ii) the date of Borrower's board of directors' adoption, Borrower's operating budget and plan for the next fiscal year; and (d) such other financial information as Lender may reasonably request from time to time. From and after such time as Borrower becomes a publicly reporting company, promptly as they are available and in any event: (i) at the time of filing of Borrower's Form 10-K with the Securities and Exchange Commission after the end of each fiscal year of Borrower, the financial statements of Borrower filed with such Form 10-K; and (ii) at the time of filing of Borrower's Form 10-Q with the Securities and Exchange Commission after the end of each of the first three fiscal quarters of Borrower, the Consolidated financial statements of Borrower filed with such Form 10-Q. In addition, Borrower shall deliver to Lender (A) promptly upon becoming available, copies of all statements, reports and notices sent or made available generally by Borrower to its security holders and (B) immediately upon receipt of notice thereof, a report of any material legal actions pending or threatened against Borrower or any Subsidiary or the commencement of any action, proceeding or governmental investigation involving Borrower or any Subsidiary is commenced that is reasonably expected to result in damages or costs to Borrower of Fifty Thousand Dollars ($50,000) or more.

6.4 Certificates of Compliance. Each time financial statements are furnished pursuant to Section 6.3 above, Borrower shall deliver to Lender an Officer's Certificate signed by a Responsible Officer in the form of, and certifying to the matters set forth in Exhibit E hereto.

6.5 Notice of Defaults. As soon as possible, and in any event within five (5) days after the discovery of a Default or an Event of Default, Borrower shall provide Lender with an Officer's Certificate setting forth the facts relating to or giving rise to such Default or Event of Default and the action which Borrower proposes to take with respect thereto.

6.6 Taxes. Borrower shall make, and cause each Subsidiary to make, due and timely payment or deposit of all federal, state, and local taxes, assessments, or contributions required of it by law or imposed upon any Property belonging to it, and will execute and deliver to Collateral Agent and Lender, on demand, appropriate certificates attesting to the payment or deposit thereof; and Borrower will make, and cause each Subsidiary to make, timely payment or deposit of all tax payments and withholding taxes required of it by applicable laws, including those laws concerning F.I.C.A., F.U.T.A., state disability, and local, state, and federal income taxes, and will, upon request, furnish Collateral Agent and Lender with proof satisfactory to Lender indicating that Borrower and each Subsidiary has made such payments or deposits; *provided* that Borrower need not make any payment if the amount or validity of such payment is contested in good faith by appropriate proceedings which suspend the collection thereof (provided that such proceedings do not involve any substantial danger of the sale, forfeiture or loss of any material item of Collateral or Collateral which in the aggregate is material to Borrower and that Borrower has adequately bonded such amounts or reserves sufficient to discharge such amounts have been provided on the books of Borrower). In addition, Borrower shall not change, and shall not permit any Subsidiary to change, its respective jurisdiction of residence for taxation purposes.

6.7 Use; Maintenance. Borrower shall keep and maintain all items of equipment and other similar types of personal property that form any significant portion or portions of the Collateral in good operating condition and repair and shall make all necessary replacements thereof and renewals thereto so that the value and operating efficiency thereof shall at all times be maintained and preserved. Borrower shall not permit any such material item of Collateral to become a fixture to real estate or an accession to other personal property, without the prior written consent of Collateral Agent and Lender. Borrower shall not permit any such material item of Collateral to be operated or maintained in violation of any applicable law, statute, rule or regulation. With respect to items of leased equipment (to the extent Collateral Agent and Lender have any security interest in any residual Borrower's interest in such equipment under the lease), Borrower shall keep, maintain, repair, replace and operate such leased equipment in accordance with the terms of the applicable lease.

6.8 Insurance. Borrower shall keep its business and the Collateral insured for risks and in amounts standard for companies in Borrower's industry and location, and as Collateral Agent or Lender may reasonably request. Insurance policies shall be in a form, with companies, and in amounts that are reasonably satisfactory to Collateral Agent and Lender. All property policies shall have a lender's loss payable endorsement showing Collateral Agent and Lender as an additional loss payee and all liability policies shall show Collateral Agent and Lender as an additional insured and all policies shall provide that the insurer must give Collateral Agent at least thirty (30) days notice before canceling its policy. At Collateral Agent's or Lender's request, Borrower shall deliver certified copies of policies and evidence of all premium payments. Proceeds payable under any property policy shall, at Collateral Agent's or Lender's option, be payable to Collateral Agent, for the benefit of Lender, or to Lender on account of the Obligations. Notwithstanding the foregoing, so long as no Event of Default has occurred and is continuing, Borrower shall have the option of applying the proceeds of any property policy, toward the replacement or repair of destroyed or damaged property; *provided* that (a) any such replaced or repaired property (i) shall be of equal or like value as the replaced or repaired Collateral and (ii) shall be deemed Collateral in which Collateral Agent and Lender have been granted a first priority security interest and (b) after the occurrence and during the continuation of an Event of Default all proceeds payable under such property policy shall, at the option of Collateral Agent or Lender, be payable to Collateral Agent, for the benefit of Lender, or to Lender on account of the Obligations. If Borrower fails to obtain insurance as required under Section 6.8 or to pay any amount or furnish any required proof of payment to third persons and Collateral Agent, Collateral Agent or Lender may make all or part of such payment or obtain such insurance policies required in Section 6.8, and take any action under the policies Collateral Agent or Lender deems prudent. On or prior to the first Funding Date and prior to each policy renewal, Borrower shall furnish to Collateral Agent certificates of insurance or other evidence satisfactory to Collateral Agent that insurance complying with all of the above requirements is in effect.

6.9 Further Assurances. At any time and from time to time Borrower shall execute and deliver such further instruments and take such further action as may reasonably be requested by Collateral Agent or Lender to make effective the purposes of this Agreement, including the continued perfection and priority of Collateral Agent's Lender's security interest in the Collateral.

6.10 Subsidiaries. Borrower, upon Lender's or Collateral Agent's request, shall cause any Subsidiary to provide Lender and Collateral Agent with a guaranty of the Obligations and a security interest in such Subsidiary's assets to secure such guaranty.

6.11 Keeping of Books. Borrower shall keep proper books of record and account, in which full and correct entries shall be made of all financial transactions and the assets and business of Borrower and its Subsidiaries in accordance with GAAP.

6.12 Liquidity Covenant. Borrower shall, at all times until the indefeasible repayment in full of the Obligations, maintain not less than Five Million Dollars ($5,000,000) on deposit in accounts over which Lender maintains an Account Control Agreement.

7. Negative Covenants. Borrower, until the full and complete payment of the Obligations, covenants and agrees that Borrower shall not:

7.1 Chief Executive Office. Change its name, jurisdiction of incorporation, chief executive office, principal place of business or any of the items set forth in Section 1 of the Disclosure Schedule without thirty (30) days prior written notice to Collateral Agent.

7.2 Collateral Control. Subject to its rights under Sections 4.4 and 7.4, remove any items of Collateral from Borrower's facility located at the address set forth on the cover page hereof or as set forth on the Disclosure Schedule.

7.3 Liens. Create, incur, allow or suffer, or permit any Subsidiary to create, incur, allow or suffer, any Lien on any of its property, or assign or convey any right to receive income, including the sale of any accounts except for Permitted Liens, or permit any Collateral not to be subject to the first priority security interest granted herein (except for Permitted Liens that are permitted by the terms of this Agreement to have priority to Collateral Agent's and Lender's Liens), or enter into any agreement, document, instrument or other arrangement (except with or in favor of Collateral Agent, for the benefit of Lender, or Lender) with any Person which directly or indirectly prohibits or has the effect of prohibiting Borrower or any Subsidiary from assigning, mortgaging, pledging, granting a security interest in or upon, or encumbering any of Borrower's or any Subsidiary's Intellectual Property, except (a) as otherwise permitted in Section 7.4 hereof and (b) as permitted in the definition of "Permitted Liens" herein.

7.4 Other Dispositions of Collateral. Convey, sell, lease or otherwise dispose of, or permit any Subsidiary to convey, sell, lease or otherwise dispose, of all or any part of the Collateral to any Person (collectively, a "Transfer"), except for: (a) Transfers of inventory in the ordinary course of business; (b) Transfers of worn-out or obsolete equipment made in the ordinary course of business; and (c) Transfers permitted under subclause (g) of the definition of Permitted Liens with respect to Collateral.

7.5 Distributions. (a) Pay any dividends or make any distributions, or permit any Subsidiary to pay any dividends or make any distributions, on their respective Equity Securities; (b) purchase, redeem, retire, defease or otherwise acquire, or permit any Subsidiary to purchase, redeem, retire, defease or otherwise acquire, for value any of their respective Equity Securities (other than repurchases pursuant to the terms of employee stock purchase plans, employee restricted stock agreements or similar arrangements in an aggregate amount not to exceed One Hundred Thousand Dollars ($100,000) in any fiscal year); (c) return, or permit any Subsidiary to return, any capital to any holder of its Equity Securities as such; (d) make, or permit any Subsidiary to make, any distribution of assets, Equity Securities, obligations or securities to any holder of its Equity Securities as such; or (e) set apart any sum for any such purpose; *provided*, however, Borrower may pay dividends payable solely in Borrower's common stock.

7.6 Mergers or Acquisitions. Merge or consolidate, or permit any Subsidiary to merge or consolidate, with or into any other Person or acquire, or permit any Subsidiary to acquire, all or substantially all of the capital stock or assets of another Person; *provided* that (a) any Subsidiary may merge into another Subsidiary and (b) any Subsidiary may merge into Borrower so long as Borrower is the surviving entity.

7.7 Change in Business or Ownership. Engage, or permit any Subsidiary to engage, in any business other than the businesses currently engaged in by Borrower or such Subsidiary, as applicable, or reasonably related thereto or have a material change in Borrower's ownership equal to or greater than twenty-five percent (25%) other than (a) by the sale by Borrower of Borrower's Equity Securities in a public offering or (b) to venture capital investors so long as Borrower identifies to Lender and Collateral Agent the venture capital investors prior to the execution of a definitive agreement relating to such change of ownership and any such venture capital investors that purchase or otherwise acquire twenty-five percent (25%) or more of the ownership of Borrower in one or a series of transactions have cleared Lender's "know your customer" checks.

7.8 Transactions With Affiliates; Creation of Subsidiaries. (a) Enter, or permit any Subsidiary to enter, into any contractual obligation with any Affiliate or engage in any other transaction with any Affiliate except upon terms at least as favorable to Borrower or such Subsidiary, as applicable, as an arms-length transaction with Persons who are not Affiliates of Borrower or (b) create a Subsidiary without providing at least 10 Business Days advance notice thereof to Lender and, if requested by Lender, such Subsidiary guarantees the Obligations and grants a security interest in its assets to secure such guaranty, in each case on terms reasonably satisfactory to Collateral Agent and Lender.

7.9 Indebtedness Payments. (a) Prepay, redeem, purchase, defease or otherwise satisfy in any manner prior to the scheduled repayment thereof any Indebtedness for borrowed money (other than amounts due or permitted to be prepaid under this Agreement) or lease obligations, (b) amend, modify or otherwise change the terms of any Indebtedness for borrowed money or lease obligations so as to accelerate the scheduled repayment thereof or (c) repay any notes to officers, directors or shareholders.

7.10 Indebtedness. Create, incur, assume or permit, or permit any Subsidiary to create, incur, or permit to exist, any Indebtedness except Permitted Indebtedness.

7.11 Investments. Make, or permit any Subsidiary to make, any Investment except for Permitted Investments.

7.12 Compliance. (a) Become, or permit any Subsidiary to become, an "investment company" or a company controlled by an "investment company" under the Investment Company Act of 1940, or undertake as one of its important activities, extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Loan for that purpose; (b) become, or permit any Subsidiary to become, subject to any other federal or state law or regulation which purports to restrict or regulate its ability to borrow money; or (c) (i) fail, or permit any Subsidiary to fail, to meet the minimum funding requirements of the Employment Retirement Income Security Act of 1974, and its regulations, as amended from time to time ("ERISA"), permit, or (ii) permit, or permit any Subsidiary to permit, a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; (d) fail, or permit any Subsidiary to fail, to comply with the Federal Fair Labor Standards Act or violate any other law or regulation, if the violation could reasonably be expected to have Material Adverse Effect.

7.13 Maintenance of Accounts. (a) Maintain any deposit account or securities account except accounts with respect to which Collateral Agent and Lender has obtained a perfected security interest in such accounts through one or more Account Control Agreements or (b) grant or allow any other Person (other than Collateral Agent or Lender) to perfect a security interest in, or enter into any agreements with any Persons (other than Collateral Agent or Lender) accomplishing perfection via control as to, any of its deposit accounts or securities accounts.

7.14 Negative Pledge Regarding Intellectual Property. Create, incur, assume or suffer to exist, or permit any Subsidiary to create, incur, assume or suffer to exist, any Lien of any kind upon any Intellectual Property or Transfer any Intellectual Property, whether now owned or hereafter acquired, other than non-exclusive licenses of Intellectual Property entered into in the ordinary course of business.

8. Events of Default. Any one or more of the following events shall constitute an "Event of Default" by Borrower under this Agreement:

8.1 Failure to Pay. If Borrower fails to pay when due and payable or when declared due and payable in accordance with the Loan Documents: (a) any Scheduled Payment on the relevant Payment Date or on the relevant Maturity Date; or (b) any other portion of the Obligations within five (5) days after receipt of written notice from Lender that such payment is due.

8.2 Certain Covenant Defaults. If Borrower fails to perform any obligation arising under Sections 6.5, 6.8 or 6.12 or violates any of the covenants contained in Section 7 of this Agreement.

8.3 Other Covenant Defaults. If Borrower fails or neglects to perform, keep, or observe any other term, provision, condition, covenant, or agreement contained in this Agreement (other than as set forth in Sections 8.1, 8.2 or 8.4 through 8.14), in any of the other Loan Documents and Borrower has failed to cure such default within thirty (30) days of the occurrence of such default. During this thirty (30) day period, the failure to cure the default is not an Event of Default.

8.4 Material Adverse Change. If there occurs a material adverse change in Borrower's business, or if there is a material impairment of the prospect of repayment of any portion of the Obligations owing to Collateral Agent or Lender or a material impairment of the value or priority of Collateral Agent's and Lender's security interest in the Collateral.

8.5 Investor Abandonment. If Lender determines in its reasonable good faith judgment, that it is the clear intention of Borrower's investors not to continue to fund Borrower in the amounts and within the timeframe necessary to enable Borrower to satisfy the Obligations as they become due and payable.

8.6 Seizure of Assets, Etc. (a) If any material portion of Borrower's or any Subsidiary's assets (i) is attached, seized, subjected to a writ or distress warrant, or is levied upon or (ii) comes into the possession of any trustee, receiver or Person acting in a similar capacity and such attachment, seizure, writ or distress warrant or levy has not been removed, discharged or rescinded within ten (10) days, (b) if Borrower or any Subsidiary is enjoined, restrained or in any way prevented by court order from continuing to conduct all or any material part of its business affairs, (c) if a judgment or other claim becomes a lien or encumbrance upon any material portion of Borrower's or any Subsidiary's assets or (d) if a notice of lien, levy, or assessment is filed of record with respect to any of Borrower's or any Subsidiary's assets by the United States Government, or any department agency or instrumentality thereof, or by any state, county, municipal, or governmental agency, and the same is not paid within ten (10) days after Borrower receives notice thereof; *provided* that none of the foregoing shall constitute an Event of Default where such action or event is stayed or an adequate bond has been posted pending a good faith contest by Borrower.

8.7 Service of Process. (a) The service of process upon Collateral Agent or Lender seeking to attach by a trustee or other process any funds of Borrower on deposit or otherwise held by Collateral Agent or Lender, (b) the delivery upon Collateral Agent or Lender of a notice of foreclosure by any Person seeking to attach or foreclose on any funds of Borrower on deposit or otherwise held by Collateral Agent or Lender or (c) the delivery of a notice of foreclosure or exclusive control to any entity holding or maintaining Borrower's deposit accounts or accounts holding securities by any Person (other than Collateral Agent or Lender) seeking to foreclose or attach any such accounts or securities.

8.8 Default on Indebtedness. One or more defaults shall exist under any agreement with any third party or parties which consists of the failure to pay any Indebtedness of Borrower or any Subsidiary at maturity or which results in a right by such third party or parties, whether or not exercised, to accelerate the maturity of Indebtedness in an aggregate amount in excess of Fifty Thousand Dollars ($50,000) or a default shall exist under any financing agreement with a Lender or any Lender's Affiliates.

8.9 Judgments. If a judgment or judgments for the payment of money in an amount, individually or in the aggregate, of at least Fifty Thousand Dollars ($50,000) shall be rendered against Borrower or any Subsidiary and shall remain unsatisfied and unstayed for a period of ten (10) days or more.

8.10 Misrepresentations. If any material misrepresentation or material misstatement exists now or hereafter in any warranty, representation, statement, certification, or report made to Collateral Agent or Lender by Borrower or any officer, employee, agent, or director of Borrower.

8.11 Breach of Warrant. If Borrower shall breach any material term of any Warrant.

8.12 Unenforceable Loan Document. If any Loan Document shall in any material respect cease to be as determined by a final non-appealable binding judgment, or Borrower shall assert that any Loan Document is not, a legal, valid and binding obligation of Borrower enforceable in accordance with its terms.

8.13 Involuntary Insolvency Proceeding. (a) If a proceeding shall have been instituted in a court having jurisdiction in the premises (i) seeking a decree or order for relief in respect of Borrower or any Subsidiary in an involuntary case under any applicable bankruptcy, insolvency or other similar law now or hereafter in effect, (ii) for the appointment of a receiver, liquidator, administrator, assignee, custodian, trustee (or similar official) of Borrower or any Subsidiary or for any substantial part of its Property or (iii) for the winding-up or liquidation of its affairs, and such proceeding shall remain undismissed or unstayed and in effect for a period of thirty (30) consecutive days or (b) such court shall enter a decree or order granting the relief sought in any such proceeding.

8.14 Voluntary Insolvency Proceeding. If Borrower or any Subsidiary shall (a) commence a voluntary case under any applicable bankruptcy, insolvency or other similar law now or hereafter in effect, (b) consent to the entry of an order for relief in an involuntary case under any such law, (c) consent to the appointment of or taking possession by a receiver, liquidator, assignee, trustee, custodian (or other similar official) of Borrower or any Subsidiary or for any substantial part of its Property, (d) shall make a general assignment for the benefit of creditors, (e) shall fail generally to pay its debts as they become due or (f) take any corporate action in furtherance of any of the foregoing.

9. Lender's Rights and Remedies.

9.1 Rights and Remedies. Upon the occurrence of any Default or Event of Default, Lender shall not have any further obligation to advance money or extend credit to or for the benefit of Borrower. In addition, upon the occurrence of an Event of Default, Collateral Agent and Lender shall have the rights, options, duties and remedies of a secured party as permitted by law and, in addition to and without limitation of the foregoing, Collateral Agent, on behalf of Lender, or Lender (acting alone) may, at its election, without notice of election and without demand, do any one or more of the following, all of which are authorized by Borrower:

(a) Acceleration of Obligations. Declare all Obligations, whether evidenced by this Agreement, by any of the other Loan Documents, or otherwise, including (i) any accrued and unpaid interest, (ii) the amounts which would have otherwise come due under Section 2.3(b)(ii) if the Loans had been voluntarily prepaid, (iii) the unpaid principal balance of the Loans and (iv) all other sums, if any, that shall have become due and payable hereunder, immediately due and payable (*provided* that upon the occurrence of an Event of Default described in Section 8.13 or 8.14 all Obligations shall become immediately due and payable without any action by Collateral Agent or Lender);

(b) Protection of Collateral. Make such payments and do such acts as Collateral Agent or Lender considers necessary or reasonable to protect Collateral Agent's and Lender's security interest in the Collateral. Borrower agrees to assemble the Collateral if Collateral Agent or Lender so requires and to make the Collateral available to Collateral Agent or Lender as Collateral Agent or Lender may designate. Borrower authorizes Collateral Agent, Lender and their designees and agents to enter the premises where the Collateral is located, to take and maintain possession of the Collateral, or any part of it, and to pay, purchase, contest, or compromise any Lien which in Collateral Agent's or Lender's determination appears or is claimed to be prior or superior to its security interest and to pay all expenses incurred in connection therewith. With respect to any of Borrower's owned premises, Borrower hereby grants Collateral Agent and Lender a license to enter into possession of such premises and to occupy the same, without charge, for up to one hundred twenty (120) days in order to exercise any of Collateral Agent's and Lender's rights or remedies provided herein, at law, in equity, or otherwise;

(c) Preparation of Collateral for Sale. Ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell (in the manner provided for herein) the Collateral. Collateral Agent, Lender and their agents and any purchasers at or after foreclosure are hereby granted a non-exclusive, irrevocable, perpetual, fully paid, royalty-free license or other right, solely pursuant to the provisions of this Section 9.1, to use, without charge, Borrower's Intellectual Property, including labels, patents, copyrights, rights of use of any name, trade secrets, trade names, trademarks, service marks, and advertising matter, or any Property of a similar nature, now or at any time hereafter owned or acquired by Borrower or in which Borrower now or at any time hereafter has any rights; *provided* that such license shall only be exercisable in connection with the disposition of Collateral upon Collateral Agent's or Lender's exercise of its remedies hereunder;

(d) Sale of Collateral. Sell the Collateral at either a public or private sale, or both, by way of one or more contracts or transactions, for cash or on terms, in such manner and at such places (including Borrower's premises) as Collateral Agent or Lender determines are commercially reasonable; and

(e) Purchase of Collateral. Credit bid and purchase all or any portion of the Collateral at any public sale.

Any deficiency that exists after disposition of the Collateral as provided above will be paid immediately by Borrower.

9.2 Set Off Right. Collateral Agent and Lender may set off and apply to the Obligations any and all Indebtedness at any time owing to or for the credit or the account of Borrower or any other assets of Borrower in Collateral Agent's or Lender's possession or control.

9.3 Effect of Sale. Upon the occurrence of an Event of Default, to the extent permitted by law, Borrower covenants that it will not at any time insist upon or plead, or in any manner whatsoever claim or take any benefit or advantage of, any stay or extension law now or at any time hereafter in force, nor claim, take nor insist upon any benefit or advantage of or from any law now or hereafter in force providing for the valuation or appraisement of the Collateral or any part thereof prior to any sale or sales thereof to be made pursuant to any provision herein contained, or to the decree, judgment or order of any court of competent jurisdiction; nor, after such sale or sales, claim or exercise any right under any statute now or hereafter made or enacted by any state or otherwise to redeem the property so sold or any part thereof, and, to the full extent legally permitted, except as to rights expressly provided herein, hereby expressly waives for itself and on behalf of each and every Person, except decree or judgment creditors of Borrower, acquiring any interest in or title to the Collateral or any part thereof subsequent to the date of this Agreement, all benefit and advantage of any such law or laws, and covenants that it will not invoke or utilize any such law or laws or otherwise hinder, delay or impede the execution of any power herein granted and delegated to Collateral Agent or Lender, but will suffer and permit the execution of every such power as though no such power, law or laws had been made or enacted. Any sale, whether under any power of sale hereby given or by virtue of judicial proceedings, shall operate to divest all right, title, interest, claim and demand whatsoever, either at law or in equity, of Borrower in and to the Property sold, and shall be a perpetual bar, both at law and in equity, against Borrower, its successors and assigns, and against any and all Persons claiming the Property sold or any part thereof under, by or through Borrower, its successors or assigns.

9.4 Power of Attorney in Respect of the Collateral. Borrower does hereby irrevocably appoint Collateral Agent, on behalf of Lender (which appointment is coupled with an interest) the true and lawful attorney in fact of Borrower, with full power of substitution and in its name to file any notices of security interests, financing statements and continuations and amendments thereof pursuant to the Code or federal law, as may be necessary to perfect or to continue the perfection of Collateral Agent's and Lender's security interests in the Collateral. Borrower does hereby irrevocably appoint Collateral Agent, on behalf of Lender (which appointment is coupled with an interest) on the occurrence of an Event of Default, the true and lawful attorney in fact of Borrower, with full power of substitution and in its name: (a) to ask, demand, collect, receive, receipt for, sue for, compound and give acquittance for any and all rents, issues, profits, avails, distributions, income, payment draws and other sums in which a security interest is granted under Section 4 with full power to settle, adjust or compromise any claim thereunder as fully as if Collateral Agent or Lender were Borrower itself; (b) to receive payment of and to endorse the name of Borrower to any items of Collateral (including checks, drafts and other orders for the payment of money) that come into Collateral Agent's or Lender's possession or under Collateral Agent's or Lender's control; (c) to make all demands, consents and waivers, or take any other action with respect to, the Collateral; (d) in Collateral Agent's or Lender's discretion to file any claim or take any other action or proceedings, either in its own name or in the name of Borrower or otherwise, which Collateral Agent or Lender may reasonably deem necessary or appropriate to protect and preserve the right, title and interest of Collateral Agent and Lender in and to the Collateral; (e) endorse Borrower's name on any checks or other forms of payment or security; (f) sign Borrower's name on any invoice or bill of lading for any account or drafts against account debtors; (g) make, settle, and adjust all claims under Borrower's insurance policies; (h) settle and adjust disputes and claims about the accounts directly with account debtors, for amounts and on terms Collateral Agent or Lender determines reasonable; (i) transfer the Collateral into the name of Collateral Agent, Lender or a third party as the Code permits; and (j) to otherwise act with respect thereto as though Collateral Agent or Lender were the outright owner of the Collateral.

9.5 Lender's Expenses. If Borrower fails to pay any amounts or furnish any required proof of payment due to third persons or entities, as required under the terms of this Agreement, then Collateral Agent or Lender may do any or all of the following: (a) make payment of the same or any part thereof; or (b) obtain and maintain insurance policies of the type discussed in Section 6.8 of this Agreement, and take any action with respect to such policies as Collateral Agent or Lender deems prudent. Any amounts paid or deposited by Collateral Agent or Lender shall constitute Lender's Expenses, shall be immediately due and payable, shall bear interest at the Default Rate and shall be secured by the Collateral. Any payments made by Collateral Agent or Lender shall not constitute an agreement by Collateral Agent or Lender to make similar payments in the future or a waiver by Collateral Agent or Lender of any Event of Default under this Agreement. Borrower shall pay all reasonable fees and expenses, including Lender's Expenses, incurred by Collateral Agent or Lender in the enforcement or attempt to enforce any of the Obligations hereunder not performed when due.

9.6 Remedies Cumulative; Independent Nature of Lender's Rights. Collateral Agent's and Lender's rights and remedies under this Agreement, the Loan Documents, and all other agreements shall be cumulative. Collateral Agent and Lender shall have all other rights and remedies not inconsistent herewith as provided under the Code, by law, or in equity. No failure on the part of Collateral Agent or Lender to exercise, and no delay in exercising, any right or remedy hereunder shall operate as a waiver thereof; nor shall any single or partial exercise of any such right or remedy preclude any other or further exercise thereof or the exercise of any other right. The Obligations of Borrower to Lender or Collateral Agent may be enforced by Lender or Collateral Agent against Borrower in accordance with the terms of this Agreement and the other Loan Documents and, to the fullest extent permitted by applicable law, it shall not be necessary for Collateral Agent or Lender, as applicable, to be joined as an additional party in any proceeding to enforce such Obligations.

9.7 Application of Collateral Proceeds. The proceeds and/or avails of the Collateral, or any part thereof, and the proceeds and the avails of any remedy hereunder (as well as any other amounts of any kind held by Collateral Agent or Lender, at the time of or received by Collateral Agent or Lender after the occurrence of an Event of Default hereunder) shall be paid to and applied as follows:

(a) First, to the payment of out-of-pocket costs and expenses, including all amounts expended to preserve the value of the Collateral, of foreclosure or suit, if any, and of such sale and the exercise of any other rights or remedies, and of all proper fees, expenses, liability and advances, including reasonable legal expenses and attorneys' fees, incurred or made hereunder by Collateral Agent or Lender, including Lender's Expenses;

(b) Second, to the payment to Lender of the amount then owing or unpaid on the Loans for any accrued and unpaid interest, the amounts which would have otherwise come due under Section 2.3(b)(ii), if the Loans had been voluntarily prepaid, the principal balance of the Loans, and all other Obligations with respect to the Loans (*provided*, however, if such proceeds shall be insufficient to pay in full the whole amount so due, owing or unpaid upon the Loans, then *first*, to the unpaid interest thereon ratably, *second*, to the amounts which would have otherwise come due under Section 2.3(b)(ii) ratably, if the Loans had been voluntarily prepaid, *third*, to the principal balance of the Loans ratably, and *fourth*, to the ratable payment of other amounts then payable to Lender under any of the Loan Documents); and

(c) Third, to the payment of the surplus, if any, to Borrower, its successors and assigns or to the Person lawfully entitled to receive the same.

9.8 Reinstatement of Rights. If Collateral Agent or Lender shall have proceeded to enforce any right under this Agreement or any other Loan Document by foreclosure, sale, entry or otherwise, and such proceedings shall have been discontinued or abandoned for any reason or shall have been determined adversely, then and in every such case (unless otherwise ordered by a court of competent jurisdiction), Collateral Agent and Lender shall be restored to their former position and rights hereunder with respect to the Property subject to the security interest created under this Agreement.

10. Waivers; Indemnification.

10.1 Demand; Protest. Borrower waives demand, protest, notice of protest, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees at any time held by Collateral Agent or Lender on which Borrower may in any way be liable.

10.2 Lender's Liability for Collateral. So long as Collateral Agent and Lender comply with their obligations, if any, under the Code, neither Collateral Agent nor Lender shall in any way or manner be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage thereto occurring or arising in any manner or fashion from any cause other than Collateral Agent's or Lender's gross negligence or willful misconduct; (c) any diminution in the value thereof; or (d) any act or default of any carrier, warehouseman, bailee, forwarding agency, or other Person whomsoever. All risk of loss, damage or destruction of the Collateral shall be borne by Borrower.

10.3 Indemnification and Waiver. Whether or not the transactions contemplated hereby shall be consummated:

(a) General Indemnity. Borrower agrees upon demand to pay or reimburse Collateral Agent and Lender for all liabilities, obligations and out-of-pocket expenses, including Lender's Expenses and reasonable fees and expenses of counsel for Collateral Agent and Lender from time to time arising in connection with the enforcement or collection of sums due under the Loan Documents, and in connection with any amendment or modification of the Loan Documents or any "work-out" in connection with the Loan Documents. Borrower shall indemnify, reimburse and hold Collateral Agent, Lender, and each of their respective successors, assigns, agents, attorneys, officers, directors, equity holders, servants, agents and employees (each an "Indemnified Person") harmless from and against all liabilities, losses, damages, actions, suits, demands, claims of any kind and nature (including claims relating to environmental discharge, cleanup or compliance), all costs and expenses whatsoever to the extent they may be incurred or suffered by such Indemnified Person in connection therewith (including reasonable attorneys' fees and expenses), fines, penalties (and other charges of any applicable Governmental Authority), licensing fees relating to any item of Collateral, damage to or loss of use of property (including consequential or special damages to third parties or damages to Borrower's property), or bodily injury to or death of any person (including any agent or employee of Borrower) (each, a "Claim"), directly or indirectly relating to or arising out of the use of the proceeds of the Loans or otherwise, the falsity of any representation or warranty of Borrower or Borrower's failure to comply with the terms of this Agreement or any other Loan Document. The foregoing indemnity shall cover, without limitation, (i) any Claim in connection with a design or other defect (latent or patent) in any item of equipment or product included in the Collateral, (ii) any Claim for infringement of any patent, copyright, trademark or other intellectual property right, (iii) any Claim resulting from the presence on or under or the escape, seepage, leakage, spillage, discharge, emission or release of any Hazardous Materials on the premises owned, occupied or leased by Borrower, including any Claims asserted or arising under any Environmental Law, (iv) any Claim for negligence or strict or absolute liability in tort or (v) any Claim asserted as to or arising under any Account Control Agreement or any Landlord Agreement; *provided*, however, Borrower shall not indemnify any Indemnified Person for any liability incurred by such Indemnified Person as a direct and sole result of such Indemnified Person's gross negligence or willful misconduct. Such indemnities shall continue in full force and effect, notwithstanding the expiration or termination of this Agreement. Upon Collateral Agent's or Lender's written demand, Borrower shall assume and diligently conduct, at its sole cost and expense, the entire defense of Collateral Agent and Lender, each of their members, partners, and each of their respective, agents, employees, directors, officers, equity holders, successors and assigns against any indemnified Claim described in this Section 10.3(a). Borrower shall not settle or compromise any Claim against or involving Collateral Agent or Lender without first obtaining Collateral Agent's or Lender's written consent thereto, which consent shall not be unreasonably withheld.

(b) Waiver. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT OR ANYWHERE ELSE, BORROWER AGREES THAT IT SHALL NOT SEEK FROM COLLATERAL AGENT OR LENDER UNDER ANY THEORY OF LIABILITY (INCLUDING ANY THEORY IN TORTS), ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES.

(c) Survival; Defense. The obligations in this Section 10.3 shall survive payment of all other Obligations pursuant to Section 12.8. At the election of any Indemnified Person, Borrower shall defend such Indemnified Person using legal counsel satisfactory to such Indemnified Person in such Person's reasonable discretion, at the sole cost and expense of Borrower. All amounts owing under this Section 10.3 shall be paid within thirty (30) days after written demand.

11. Notices. Unless otherwise provided in this Agreement, all notices or demands by any party relating to this Agreement or any other agreement entered into in connection herewith shall be in writing and (except for financial statements and other informational documents which may be sent by first-class mail, postage prepaid) shall be personally delivered or sent by certified mail, postage prepaid, return receipt requested, by prepaid nationally recognized overnight courier, or by prepaid facsimile to Borrower or to Lender, as the case may be, at their respective addresses set forth below:

If to Borrower: Celsion Corporation
997 Lenox drive, Suite 100
Lawrenceville, NJ 08648
Attention: Michael H. Tardugno
Chairman, President & CEO
Fax: (609) 896-2200
Ph: (609) 896-9100

If to Horizon: Horizon Technology Finance Corporation
312 Farmington Avenue
Farmington, CT 06032
Attention: Legal Department
Fax: (860) 676-8655
Ph: (860) 676-8654

The parties hereto may change the address at which they are to receive notices hereunder, by notice in writing in the foregoing manner given to the other.

12. General Provisions.

12.1 Successors and Assigns. This Agreement and the Loan Documents shall bind and inure to the benefit of the respective successors and permitted assigns of each of the parties; *provided*, however, neither this Agreement nor any rights hereunder may be assigned by Borrower without Lender's prior written consent, which consent may be granted or withheld in Lender's sole discretion. Lender shall have the right without the consent of or notice to Borrower to sell, transfer, assign, negotiate, or grant participations in all or any part of, or any interest in Lender's rights and benefits hereunder. Collateral Agent and Lender may disclose the Loan Documents and any other financial or other information relating to Borrower to any potential participant or assignee of any of the Loans; *provided* that such participant or assignee agrees to protect the confidentiality of such documents and information using the same measures that it uses to protect its own confidential information.

12.2 Time of Essence. Time is of the essence for the performance of all obligations set forth in this Agreement.

12.3 Severability of Provisions. Each provision of this Agreement shall be severable from every other provision of this Agreement for the purpose of determining the legal enforceability of any specific provision.

12.4 Entire Agreement; Construction; Amendments and Waivers.

(a) Entire Agreement. This Agreement and each of the other Loan Documents, taken together, constitute and contain the entire agreement among Borrower, Collateral Agent and Lender and supersede any and all prior agreements, negotiations, correspondence, understandings and communications between the parties, whether written or oral, respecting the subject matter hereof. Borrower acknowledges that it is not relying on any representation or agreement made by Collateral Agent, Lender or any employee, attorney or agent thereof, other than the specific agreements set forth in this Agreement and the Loan Documents.

(b) Construction. This Agreement is the result of negotiations between and has been reviewed by each of Borrower, Collateral Agent and Lender as of the date hereof and their respective counsel; accordingly, this Agreement shall be deemed to be the product of the parties hereto, and no ambiguity shall be construed in favor of or against Borrower, Collateral Agent or Lender. Borrower, Collateral Agent and Lender agree that they intend the literal words of this Agreement and the other Loan Documents and that no parol evidence shall be necessary or appropriate to establish Borrower's, Collateral Agent's or Lender's actual intentions.

(c) Amendments and Waivers. Any and all discharges or waivers of, or consents to any departures from any provision of this Agreement or of any of the other Loan Documents shall not be effective without the written consent of Lender; *provided* that no such discharge, waiver or consent affecting the rights or duties of the Collateral Agent under this Agreement or any other Loan Document shall be effective without the written consent of the Collateral Agent. Any and all amendments and modifications of this Agreement or of any of the other Loan Documents shall not be effective without the written consent of Lender and Borrower; *provided* that no such amendment or modification affecting the rights or duties of the Collateral Agent under this Agreement or any other Loan Document shall be effective without the written consent of the Collateral Agent. Any waiver or consent with respect to any provision of the Loan Documents shall be effective only in the specific instance and for the specific purpose for which it was given. No notice to or demand on Borrower in any case shall entitle Borrower to any other or further notice or demand in similar or other circumstances. Any amendment, modification, waiver or consent affected in accordance with this Section 12.4 shall be binding upon Collateral Agent, Lender and on Borrower.

12.5 Reliance by Lender. All covenants, agreements, representations and warranties made herein by Borrower shall be deemed to be material to and to have been relied upon by Collateral Agent and Lender, notwithstanding any investigation by Collateral Agent or Lender.

12.6 No Set-Offs by Borrower. All sums payable by Borrower pursuant to this Agreement or any of the other Loan Documents shall be payable without notice or demand and shall be payable in United States Dollars without set-off or reduction of any manner whatsoever.

12.7 Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts (including signatures delivered by facsimile or other electronic means), each of which, when executed and delivered, shall be deemed to be an original, and all of which, when taken together, shall constitute but one and the same Agreement.

12.8 Survival. All covenants, representations and warranties made in this Agreement shall continue in full force and effect so long as any Obligations or commitment to fund remain outstanding. The obligations of Borrower to indemnify Collateral Agent and Lender with respect to the expenses, damages, losses, costs and liabilities described in Section 10.3 shall survive until all applicable statute of limitations periods with respect to actions that may be brought against Collateral Agent or Lender have run.

13. Relationship of Parties. Borrower and Lender acknowledge, understand and agree that the relationship between Borrower, on the one hand, and Lender, on the other, is, and at all times shall remain solely that of a borrower and lender. Lender shall not, under any circumstances, be construed to be a partner or a joint venturer of Borrower or any of its Affiliates; nor shall Lender, under any circumstances, be deemed to be in a relationship of confidence or trust or a fiduciary relationship with Borrower or any of its Affiliates, or to owe any fiduciary duty or any other duty to Borrower or any of its Affiliates. Neither Collateral Agent nor Lender undertakes or assumes any responsibility or duty to Borrower or any of its Affiliates to select, review, inspect, supervise, pass judgment upon or otherwise inform Borrower or any of its Affiliates of any matter in connection with its or their Property, any Collateral held by Collateral Agent or Lender or the operations of Borrower or any of its Affiliates. Borrower and each of its Affiliates shall rely entirely on their own judgment with respect to such matters, and any review, inspection, supervision, exercise of judgment or supply of information undertaken or assumed by Collateral Agent or Lender in connection with such matters is solely for the protection of Collateral Agent and Lender and neither Borrower nor any Affiliate is entitled to rely thereon.

14. Confidentiality. All information (other than periodic reports filed by Borrower with the Securities and Exchange Commission) disclosed by Borrower to Collateral Agent or Lender in writing or through inspection pursuant to this Agreement that is marked confidential shall be considered confidential. Collateral Agent and Lender agrees to use the same degree of care to safeguard and prevent disclosure of such confidential information as Collateral Agent and Lender uses with its own confidential information, but in any event no less than a reasonable degree of care. Neither Collateral Agent nor Lender shall disclose such information to any third party (other than (a) to another party hereto, (b) to Collateral Agent's or Lender's members, partners, attorneys, governmental regulators (including any self-regulatory authority) or auditors, (c) to Collateral Agent's or Lender's subsidiaries and affiliates, (d) on a confidential basis, to any rating agency, (e) to prospective transferees and purchasers of the Loans or any actual or prospective party (or its Affiliates) to any swap, derivative or other transaction under which payments are to be made by reference to the Obligations, Borrower, any Loan Document or any payment thereunder, all subject to the same confidentiality obligation set forth herein or (f) as required by law, regulation, subpoena or other order to be disclosed) and shall use such information only for purposes of evaluation of its investment in Borrower and the exercise of Collateral Agent's or Lender's rights and the enforcement of its remedies under this Agreement and the other Loan Documents. The obligations of confidentiality shall not apply to any information that (i) was known to the public prior to disclosure by Borrower under this Agreement, (ii) becomes known to the public through no fault of Collateral Agent or Lender, (iii) is disclosed to Collateral Agent or Lender on a non-confidential basis by a third party or (iv) is independently developed by Collateral Agent or Lender. Notwithstanding the foregoing, Collateral Agent's and Lender's agreement of confidentiality shall not apply if Collateral Agent or Lender has acquired indefeasible title to any Collateral or in connection with any enforcement or exercise of Collateral Agent's or Lender's rights and remedies under this Agreement following an Event of Default, including the enforcement of Collateral Agent's and Lender's security interest in the Collateral.

15. CHOICE OF LAW AND VENUE; JURY TRIAL WAIVER. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF CONNECTICUT. EACH OF BORROWER, COLLATERAL AGENT AND LENDER HEREBY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS LOCATED IN THE STATE OF CONNECTICUT. BORROWER, COLLATERAL AGENT AND LENDER HEREBY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF ANY OF THE LOAN DOCUMENTS OR ANY OF THE TRANSACTIONS CONTEMPLATED THEREIN, INCLUDING CONTRACT CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW OR STATUTORY CLAIMS.

[Remainder of page intentionally left blank.]

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

BORROWER:
CELSION CORPORATION

By: _____
Name: _____
Title: _____

LENDER:
HORIZON TECHNOLOGY FINANCE CORPORATION

By: _____
Name: Robert D. Pomeroy, Jr.
Title: Chief Executive Officer

[SIGNATURE PAGE TO VENTURE LOAN AND SECURITY AGREEMENT]

LIST OF EXHIBITS AND SCHEDULES

Exhibit A	Disclosure Schedule
Exhibit B	Funding Certificate
Exhibit C	Form of Note
Exhibit D	Form of Legal Opinion
Exhibit E	Form of Officer’s Certificate

EXHIBIT A

DISCLOSURE SCHEDULE

[Provided separately – to be inserted upon completion]

EXHIBIT B

FUNDING CERTIFICATE

The undersigned, being the duly elected and acting of CELSION CORPORATION, a Delaware corporation ("Borrower"), does hereby certify to HORIZON TECHNOLOGY FINANCE CORPORATION ("Horizon" or "Lender") in connection with that certain Venture Loan and Security Agreement dated as of June __, 2018 by and among Borrower, Lender and Horizon as Collateral Agent (the "Loan Agreement"; with other capitalized terms used below having the meanings ascribed thereto in the Loan Agreement) that:

1. The representations and warranties made by Borrower in Section 5 of the Loan Agreement and in the other Loan Documents are true and correct as of the date hereof.

2. No event or condition has occurred that would constitute a Default or an Event of Default under the Loan Agreement or any other Loan Document.

3. Borrower is in compliance with the covenants and requirements contained in Sections 4, 6 and 7 of the Loan Agreement.

4. All conditions referred to in Section 3 of the Loan Agreement to the making of the Loan to be made on or about the date hereof have been satisfied.

5. No material adverse change in the general affairs, management, results of operations, condition (financial or otherwise) or prospects of Borrower, whether or not arising from transactions in the ordinary course of business, has occurred.

6. The proceeds for Loan A, Loan B, Loan C and Loan D shall be disbursed as follows:

Disbursement from Horizon:	
Loan Amount	$
Less:	
Legal Fees	$
Balance of Commitment Fee	$
Net Proceeds due from Horizon:	$

7. The aggregate net proceeds of Loan A, Loan B, Loan C and Loan D in the amount of $_____ shall be transferred by Horizon to Borrower's account as follows:

Account Name:
Bank Name:
Bank Address:
Attention:
Telephone:
Account Number:
ABA Number:

Dated: June __, 2018

BORROWER:

CELSION CORPORATION

By: _____
Name: _____
Title: _____

[Signature page to Funding Certificate]

EXHIBIT C

SECURED PROMISSORY NOTE

(Loan A/B/C/D)

$2,500,000 Dated: June __, 2018

FOR VALUE RECEIVED, the undersigned, CELSION CORPORATION, a Delaware corporation ("Borrower"), HEREBY PROMISES TO PAY to HORIZON TECHNOLOGY FINANCE CORPORATION, a Delaware corporation ("Lender") the principal amount of Five Million Dollars ($5,000,000) or such lesser amount as shall equal the outstanding principal balance of Loan [_] (the "Loan") made to Borrower by Lender pursuant to the Loan Agreement (as defined below), and to pay all other amounts due with respect to the Loan on the dates and in the amounts set forth in the Loan Agreement. Capitalized terms used but not defined herein shall have the meaning ascribed thereto in the Loan Agreement.

Interest on the principal amount of this Note from the date of this Note shall accrue at the Loan Rate or, if applicable, the Default Rate, each as established in accordance with the Loan Agreement (as defined below). Interest shall be computed on the basis of a 360-day year for the actual number of days elapsed. If the Funding Date is not the first day of the month, interim interest accruing from the Funding Date through the last day of that month shall be paid on the first calendar day of the next calendar month. Commencing [_], 201[_], through and including [_], 201[_], on the first day of each month (each an "Interest Payment Date") Borrower shall make payments of accrued interest only on the outstanding principal amount of the Loan. Commencing on [_], 201[_], and continuing on the first day of each month thereafter (each a "Principal and Interest Payment Date" and, collectively with each Interest Payment Date, each a "Payment Date"), Borrower shall make to Lender twenty-four (24) equal payments of principal in the amount of [_____] plus accrued interest on the then outstanding principal amount due hereunder. On the earliest to occur of (i) [_], 201[_], (ii) payment in full of the principal balance of the Loan or (iii) an Event of Default and demand by Lender of payment in full of the Loan, Borrower shall make a payment of Two Hundred Thousand and 00/100 Dollars ($200,000) to Lender (the "Final Payment"). If not sooner paid, all outstanding amounts hereunder and under the Loan Agreement shall become due and payable on [_], 201[_].

Principal, interest and all other amounts due with respect to the Loan, are payable in lawful money of the United States of America to Lender as set forth in the Loan Agreement. The principal amount of this Note and the interest rate applicable thereto, and all payments made with respect thereto, shall be recorded by Lender and, prior to any transfer hereof, endorsed on the grid attached hereto which is part of this Note.

This Note is referred to in, and is entitled to the benefits of, the Venture Loan and Security Agreement dated as of the date hereof (the "Loan Agreement"), among Borrower, Lender and Lender as Collateral Agent. The Loan Agreement, among other things, (a) provides for the making of a secured Loan to Borrower, and (b) contains provisions for acceleration of the maturity hereof upon the happening of certain stated events.

This Note may not be prepaid, except as set forth in Section 2.3 of the Loan Agreement.

This Note and the obligation of Borrower to repay the unpaid principal amount of the Loan, interest on the Loan and all other amounts due Lender under the Loan Agreement is secured under the Loan Agreement.

Presentment for payment, demand, notice of protest and all other demands and notices of any kind in connection with the execution, delivery, performance and enforcement of this Note are hereby waived.

Borrower shall pay all fees and expenses, including attorneys' fees and costs, incurred by Lender in the enforcement or attempt to enforce any of Borrower's obligations hereunder not performed when due.

Any reference herein to Lender shall be deemed to include and apply to every subsequent holder of this Note. Reference is made to the Loan Agreement for provisions concerning optional and mandatory prepayments, Collateral, acceleration and other material terms affecting this Note.

This Note shall be governed by and construed under the laws of the State of Connecticut. Borrower agrees that any action or proceeding brought to enforce or arising out of this Note may be commenced in the state or federal courts located within the State of Connecticut.

IN WITNESS WHEREOF, Borrower has caused this Note to be duly executed by one of its officers thereunto duly authorized on the date hereof.

BORROWER:

CELSION CORPORATION

By: _____
Name: _____
Title: _____

[SIGNATURE PAGE TO SECURED PROMISSORY NOTE (LOAN [A/B/C/D])]

EXHIBIT D

ITEMS TO BE COVERED BY OPINION OF BORROWER'S COUNSEL

1. Borrower is a corporation, duly organized, validly existing and in good standing under the laws of the State of Delaware, and is duly qualified and authorized to do business in the State of New Jersey.

2. Borrower has the full corporate power, authority and legal right, and has obtained all necessary approvals, consents and given all notices to execute and deliver the Loan Documents and perform the terms thereof.

3. The Loan Documents have been duly authorized, executed and delivered by Borrower and constitute valid, legal and binding agreements, and are enforceable in accordance with their terms.

4. To our knowledge, there is no action, suit, audit, investigation, proceeding or patent claim pending or threatened against Borrower in any court or before any governmental commission, agency, board or authority which might have a Material Adverse Effect.

5. The Shares (as defined in the Warrant) issuable pursuant to exercise or conversion of the Warrant have been duly authorized and reserved for issuance by Borrower and, when issued in accordance with the terms thereof, will be validly issued, fully paid and nonassessable.

6. The shares of Common Stock issuable upon conversion of the Shares have been duly authorized and reserved and, when issued in accordance with the terms of Borrower's Certificate of Incorporation, as amended, will be validly issued, fully paid and nonassessable.

7. The execution and delivery of the Loan Documents are not, and the issuance of the Shares upon exercise of the Warrant in accordance with the terms thereof will not be, inconsistent with Borrower's Certificate of Incorporation, as amended, or Bylaws, do not and will not contravene any law, governmental rule or regulation, judgment or order applicable to Borrower, and do not and will not conflict with or contravene any provision of, or constitute a default under, any indenture, mortgage, contract or other agreement or instrument of which Borrower is a party or by which it is bound or require the consent or approval of, the giving of notice to, the registration or filing with or the taking of any action in respect of or by, any federal, state or local government authority or agency or other person, except for the filing of notices pursuant to federal and state securities laws, which filings will be effected by the time required thereby.

EXHIBIT E

FORM OF OFFICER'S CERTIFICATE

TO: HORIZON TECHNOLOGY FINANCE CORPORATION, as Lender

FROM: CELSION CORPORATION, as Borrower

The undersigned authorized officer ("**Officer**") of CELSION CORPORATION, on behalf of itself and all other Borrowers under and as defined in the Loan Agreement (as defined herein below) (individually and collectively, jointly and severally, "**Borrower**"), hereby certifies that in accordance with the terms and conditions of the Venture Loan and Security Agreement dated as of June __, 2018 by and among Borrower, Collateral Agent, and the Lenders from time to time party thereto (the "**Loan Agreement**;" capitalized terms used but not otherwise defined herein shall have the meanings given them in the Loan Agreement),

(a) Borrower is in complete compliance for the period ending _____ with all required covenants except as noted below;

(b) There are no Events of Default, except as noted below;

(c) Except as noted below, all representations and warranties of Borrower stated in the Loan Documents are true and correct in all material respects on this date and for the period described in (a), above; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date.

(d) Borrower, and each of Borrower's Subsidiaries, has timely filed all required tax returns and reports, Borrower, and each of Borrower's Subsidiaries, has timely paid all foreign, federal, state, and local taxes, assessments, deposits and contributions owed by Borrower, or Subsidiary, except as otherwise permitted pursuant to the terms of Section 5.8 of the Loan Agreement;

(e) No Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Collateral Agent and the Lender.

Attached are the required documents, if any, supporting our certification(s). The Officer, on behalf of Borrower, further certifies that the attached financial statements are prepared in accordance with Generally Accepted Accounting Principles (GAAP) and are consistently applied from one period to the next except as explained in an accompanying letter or footnotes and except, in the case of unaudited financial statements, for the absence of footnotes and subject to year-end audit adjustments as to the interim financial statements.

Please indicate compliance status since the last Officer's Certificate by circling Yes, No, or N/A under "Complies" column.

	Reporting Covenant	Requirement	Actual	Complies		
1)	Financial statements	Quarterly within 45 days		Yes	No	N/A
2)	Annual (CPA Audited) statements	Within 180 days after FYE		Yes	No	N/A
3)	Annual Financial Projections/Budget (prepared on a monthly basis)	Annually (within 30 days of the earlier of (i) FYE or (ii) BoD approval), and when revised		Yes	No	N/A
4)	A/R & A/P agings	Monthly within 30 days		Yes	No	N/A
5)	8-K, 10-K and 10-Q Filings	If applicable, within 5 days of filing if not on SEC.gov website		Yes	No	N/A
6)	Officer's Certificate	Quarterly within 45 days		Yes	No	N/A
7)	IP Report	When required due to new IP filings		Yes	No	N/A
8)	Total amount of Borrower's cash and cash equivalents at the last day of the measurement period	$_____				
9)	Total amount of Borrower's Subsidiaries' cash and cash equivalents at the last day of the measurement period	$_____				

Deposit and Securities Accounts: ***(Please list all accounts; attach separate sheet if additional space needed)***

	Institution Name	Account Number	New Account?		Account Control Agreement in place?	
1)			Yes	No	Yes	No
2)			Yes	No	Yes	No
3)			Yes	No	Yes	No
4)			Yes	No	Yes	No

Financial Covenants

Covenant	Requirement	Actual	Compliance	
Cash on deposit in accounts over which Lender maintains an Account Control Agreement	$5,000,000	[$_____]	Yes	No

Other Matters

If the response to any of the below is "Yes", please provide an explanation of the circumstances giving rise to such "Yes" response on an attachment hereto.

1)	Have there been any changes in senior management since the last Officer's Certificate?	Yes	No
2)	Has there been any transfers/sales/disposals/retirement or relocation of Collateral or IP prohibited by the Loan Agreement?	Yes	No
3)	Have there been any new or pending claims or causes of action against Borrower that involve more than Fifty Thousand Dollars ($50,000.00)?	Yes	No
4)	Has any IP been abandoned, forfeited or dedicated to the public since the last Officer's Certificate?	Yes	No
5)	Has any Default or Event of Default occurred since the last Officer's Certificate?	Yes	No
6)	Has Borrower sold new shares of equity or made adjustments to existing shares of equity? If yes, please provide applicable supporting documentation.	Yes	No
7)	Has any direct or indirect Subsidiary been formed since the last Officer's Certificate?	Yes	No
8)	Has any piece of a Borrower's property been subject to a Lien (other than the lien of Lender pursuant to the Loan Agreement) since the date of the last Officer's Certificate?	Yes	No
9)	Has any Borrower or any Subsidiary incurred any Indebtedness since the date of the last Officer's Certificate?	Yes	No
10)	Has Borrower or any Subsidiary made any Investment since the date of the last Officer's Certificate?	Yes	No

Exceptions: Please explain any exceptions with respect to the certification above: (If no exceptions exist, state "No exceptions." Attach separate sheet if additional space needed.)

CELSION CORPORATION, on behalf of itself and all other Borrowers

By _____
Name: _____
Title: _____
Date: _____

Exhibit 31.1

CELSION CORPORATION
CERTIFICATION

I, Michael H. Tardugno, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Celsion Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)), and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15 (f)), for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

Celsion Corporation

August 14, 2018

By: */s/ Michael H. Tardugno*
Michael H. Tardugno
Chairman, President and Chief Executive Officer

Exhibit 31.2

CELSION CORPORATION
CERTIFICATION

I, Jeffrey W. Church, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Celsion Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)), and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15 (f)), for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

Celsion Corporation

August 14, 2018

By: */s/ Jeffrey W. Church*
Jeffrey W. Church
Senior Vice President and Chief
Financial Officer

Exhibit 32.1

CELSION CORPORATION

SECTION 1350 CERTIFICATIONS*

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), each of the undersigned hereby certifies that, to the best of his knowledge, (i) the Quarterly Report on Form 10-Q for the period ended June 30, 2018 of Celsion Corporation (the "Company") filed with the Securities and Exchange Commission on the date hereof fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act and (ii) the information contained in such report fairly presents, in all material respects, the financial condition and results of operations of the Company.

August 14, 2018

By: */s/ Michael H. Tardugno*
Michael H. Tardugno
Chairman, President and Chief Executive Officer

August 14, 2018

By: */s/ Jeffrey W. Church*
Jeffrey W. Church
Senior Vice President and Chief Financial Officer

* This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.