
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

Quarterly Report Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

For the Quarterly Period Ended June 30, 2013

Commission File Number **0-13839**

CAS MEDICAL SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

06-1123096
(I.R.S. employer
identification no.)

44 East Industrial Road, Branford, Connecticut 06405
(Address of principal executive offices, including zip code)

(203) 488-6056
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of "large accelerated filer", "accelerated filer", and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):
Large Accelerated Filer Accelerated Filer Non-Accelerated Filer Smaller Reporting Company

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: Common Stock, \$.004 par value
18,943,208 shares as of August 5, 2013.

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PART I – FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

CAS Medical Systems, Inc.

Condensed Consolidated Balance Sheets
(Unaudited)

<u>Assets</u>	<u>June 30,</u> <u>2013</u>	<u>December 31,</u> <u>2012</u>
Current assets:		
Cash and cash equivalents	\$ 6,022,405	\$ 9,245,094
Short-term investments	757,973	1,250,794
Accounts receivable, net of allowance	2,638,326	2,197,513
Inventories	3,449,327	3,543,325
Other current assets	610,720	612,082
Total current assets	<u>13,478,751</u>	<u>16,848,808</u>
Property and equipment:		
Leasehold improvements	311,320	311,320
Equipment at customers	3,564,803	3,407,836
Machinery and equipment	5,635,683	5,439,521
	<u>9,511,806</u>	<u>9,158,677</u>
Accumulated depreciation and amortization	<u>(6,854,108)</u>	<u>(6,443,303)</u>
Property and equipment, net	<u>2,657,698</u>	<u>2,715,374</u>
Intangible and other assets, net	850,804	830,245
Total assets	<u>\$ 16,987,253</u>	<u>\$ 20,394,427</u>

CAS Medical Systems, Inc.

Condensed Consolidated Balance Sheets
(Unaudited)

<u>Liabilities and Stockholders' Equity</u>	<u>June 30,</u> <u>2013</u>	<u>December 31,</u> <u>2012</u>
Current liabilities:		
Accounts payable	\$ 1,058,666	\$ 1,906,327
Accrued expenses	1,327,505	1,625,923
Current portion of long-term debt	—	697,834
Total current liabilities	<u>2,386,171</u>	<u>4,230,084</u>
Deferred gain on sale and leaseback of property	562,833	630,152
Long-term debt less current portion	<u>4,884,132</u>	<u>2,685,560</u>
Total liabilities	7,833,136	7,545,796
Commitments and contingencies	—	—
Stockholders' equity:		
Preferred stock, \$.001 par value per share, 1,000,000 shares authorized -		
Series A convertible preferred stock, 95,500 shares issued and outstanding, liquidation value of \$11,018,756 at June 30, 2013	8,802,000	8,802,000
Series A exchangeable preferred stock, 54,500 shares issued and outstanding, liquidation value of \$6,327,160 at June 30, 2013	5,135,640	5,135,640
Common stock, \$.004 par value per share, 40,000,000 shares authorized, 13,821,221 and 13,767,192 shares issued at June 30, 2013, and December 31, 2012, respectively, including shares held in treasury	55,285	55,069
Common stock held in treasury, at cost - 86,000 shares	(101,480)	(101,480)
Additional paid-in capital	12,550,043	12,023,721
Accumulated deficit	<u>(17,287,371)</u>	<u>(13,066,319)</u>
Total stockholders' equity	9,154,117	12,848,631
Total liabilities and stockholders' equity	<u>\$ 16,987,253</u>	<u>\$ 20,394,427</u>

See accompanying notes.

CAS Medical Systems, Inc.

Condensed Consolidated Statements of Operations
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2013	2012	2013	2012
Net sales	\$ 5,042,420	\$ 5,198,300	\$ 10,618,258	\$ 10,607,119
Cost of sales	<u>3,124,411</u>	<u>3,015,656</u>	<u>6,475,267</u>	<u>6,389,401</u>
Gross profit	1,918,009	2,182,644	4,142,991	4,217,718
Operating expenses:				
Research and development	1,029,533	949,704	2,082,393	1,839,821
Selling, general and administrative	<u>3,460,829</u>	<u>2,897,182</u>	<u>6,542,582</u>	<u>6,004,703</u>
	<u>4,490,362</u>	<u>3,846,886</u>	<u>8,624,975</u>	<u>7,844,524</u>
Operating loss	(2,572,353)	(1,664,242)	(4,481,984)	(3,626,806)
Interest expense	76,824	735	142,554	883
Other expense (income)	(15,308)	(15,368)	(403,487)	(31,988)
Net loss	<u>(2,633,869)</u>	<u>(1,649,609)</u>	<u>(4,221,051)</u>	<u>(3,595,701)</u>
Preferred stock dividend accretion	<u>298,333</u>	<u>278,332</u>	<u>591,534</u>	<u>551,877</u>
Net loss applicable to common stockholders	<u>\$ (2,932,202)</u>	<u>\$ (1,927,941)</u>	<u>\$ (4,812,585)</u>	<u>\$ (4,147,578)</u>
Per share basic and diluted loss applicable to common stockholders:	<u>\$ (0.22)</u>	<u>\$ (0.15)</u>	<u>\$ (0.36)</u>	<u>\$ (0.31)</u>
Weighted average number of common shares outstanding:				
Basic and diluted	13,425,416	13,260,345	13,408,584	13,239,593

See accompanying notes.

CAS Medical Systems, Inc.

Condensed Consolidated Statements of Cash Flows
(Unaudited)

	Six Months Ended June 30,	
	2013	2012
OPERATING ACTIVITIES:		
Net loss	\$ (4,221,051)	\$ (3,595,701)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	576,964	501,892
Amortization of debt discount	32,617	—
Stock compensation	463,106	466,778
Cash received from demutualization of insurance provider	(396,156)	—
Impaired capitalized costs	1,323	27,262
Amortization of gain on sale and leaseback of property	(67,319)	(67,319)
Changes in operating assets and liabilities:		
Accounts receivable	(440,813)	(461,182)
Inventories	93,998	(334,617)
Other current assets	1,360	(129,003)
Accounts payable and accrued expenses	(1,124,079)	(195,851)
Net cash used in operating activities	(5,080,050)	(3,787,741)
INVESTING ACTIVITIES:		
Expenditures for property and equipment	(466,735)	(964,510)
Short-term investments	492,821	(7,952)
Cash received from demutualization of insurance provider	396,156	—
Purchase of intangible assets	(62,935)	(39,390)
Net cash provided by (used in) investing activities	359,307	(1,011,852)
FINANCING ACTIVITIES:		
Deferred financing costs	(11,500)	—
Proceeds from long-term debt and warrants	1,500,000	—
Proceeds from issuance of common stock	9,554	10,741
Net cash provided by financing activities	1,498,054	10,741
Net change in cash and cash equivalents	(3,222,689)	(4,788,852)
Cash and cash equivalents, beginning of period	9,245,094	11,387,300
CASH AND CASH EQUIVALENTS, END OF PERIOD	\$ 6,022,405	\$ 6,598,448
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:		
Cash paid during the period for interest	\$ 102,556	\$ 883
Accrued liability settled with common stock	\$ 22,000	\$ —

See accompanying notes.

CAS Medical Systems, Inc.
Notes to Condensed Consolidated Financial Statements
(Unaudited)

June 30, 2013

(1) The Company

CAS Medical Systems, Inc. (the “Company” or “CASMED”) is a medical technology company that develops, manufactures, and distributes non-invasive patient monitoring products that are vital to patient care. Our products include the FORE-SIGHT® Absolute Tissue Oximeter and sensors and our Traditional Monitoring products which include MAXNIBP® blood pressure measurement technology, bedside monitoring products, and supplies for neonatal intensive care. These products are designed to provide accurate, non-invasive, biologic measurements that guide healthcare providers to deliver improved patient care. CASMED markets its products worldwide through its sales force, distributors, manufacturers’ representatives, and original equipment manufacturers.

(2) Basis of Presentation

The condensed consolidated financial statements included herein have been prepared, without audit, pursuant to the rules and regulations of the Securities and Exchange Commission. Certain information and disclosures included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America have been condensed or omitted pursuant to such rules and regulations. These condensed consolidated financial statements should be read in conjunction with the financial statements and notes thereto included in the Company's Annual Report filed on Form 10-K for the year ended December 31, 2012. The condensed consolidated balance sheet as of December 31, 2012 was derived from the audited financial statements.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of sales and expenses during the reporting period. Estimates that are particularly sensitive to change in the near-term are inventory valuation allowances, deferred income tax asset valuation allowances, and allowances for doubtful accounts. Actual results could differ from those estimates. In the opinion of the Company, all adjustments (consisting of normal recurring accruals) necessary to present fairly the consolidated financial position of the Company and its consolidated results of operations and cash flows have been included in the accompanying financial statements. The results of operations for interim periods are not necessarily indicative of the expected results for the full year.

(3) Stockholders’ Equity

Series A Preferred Stock

On June 9, 2011, the Company issued 95,500 shares of “Series A Convertible Preferred Stock” and 54,500 shares of “Series A Exchangeable Preferred Stock” (the “Series A Preferred Stock”), each with a par value \$0.001 per share and which are convertible into authorized but unissued shares of common stock, par value \$0.004 per share, of the Company. The Series A Exchangeable Preferred Stock has substantially identical terms to the Series A Convertible Preferred Stock.

The shares of Series A Preferred Stock were initially convertible at the option of the holder into common stock at a conversion price of \$2.82 (the “Conversion Price”). The Conversion Price is subject to standard weighted-average anti-dilution adjustments. On July 22, 2013, upon completion of the Company’s public offering of common stock, the Conversion Price was adjusted to \$2.389 per share.

Following the date of issuance, the stated value (\$100.00 per share) of the Series A Preferred Stock accretes at an annual rate of 7% compounded quarterly. On an annual basis, prior to the third anniversary of the original date of issuance, the holders may elect, pursuant to certain requirements, to receive the following 12 months of accretion in the form of a dividend of 7% per annum, payable quarterly in cash at the holder’s option. After the third anniversary of the closing, such accretion may be made in cash at the Company’s option. The Series A Preferred Stock is subject to certain default provisions whereby the dividend rate would be increased by an additional 5% per annum.

After the third anniversary of the original date of issuance, the Company can force conversion of all, and not less than all, of the outstanding Series A Preferred Stock into Company common stock as long as the closing price of its common stock is at least 250% of the Conversion Price, or \$5.9725 per common share, for at least 20 of the 30 consecutive trading days immediately prior to the conversion and the average daily trading volume is greater than 50,000 shares per day over the 30 consecutive trading days immediately prior to such conversion. The Company's ability to cause a conversion is subject to certain other conditions as provided pursuant to the terms of the Series A Preferred Stock.

The Series A Preferred Stock is entitled to a liquidation preference equal to the greater of 100% of the accreted value for each share of Series A Preferred Stock outstanding on the date of a liquidation plus all accrued and unpaid dividends or the amount a holder would have been entitled to had the holder converted the shares of Series A Preferred Stock into common stock immediately prior to the liquidation. The Series A Preferred Stock votes together with the common stock as if converted on the original date of issuance. Holders of Series A Preferred Stock are entitled to purchase their pro rata share of additional stock issuances in certain future financings.

Pursuant to the terms of the Series A Preferred Stock, a holder must issue a written request to the Company by June 15th of 2011, 2012, or 2013 to receive cash dividends for the applicable succeeding four fiscal quarters ending June 30th, September 30th, December 31st, and March 31st. The holders have elected in writing not to receive cash dividends for the fiscal quarters through June 30, 2013. Further, the holders have irrevocably waived their cash dividend rights for the four fiscal quarters ended June 30, 2014, in accordance with the Company's agreement with East West Bank executed on July 31, 2012. The bank agreement prohibits the payment of dividends. The holders' waiver of their cash dividend rights for the four fiscal quarters ended June 30, 2014, may be revoked if the Company's obligations to East West Bank are terminated at any time prior to June 30, 2014. As of June 30, 2013, \$2,345,916 in dividend accretion has accumulated on the Series A Preferred Stock and the Series A Exchangeable Preferred Stock.

Common Stock Public Offering

On July 16, 2013, the Company entered into a purchase agreement with Northland Securities, Inc. ("Northland") related to the public offering (the "Offering") of 5,200,000 shares of its common stock at \$1.25 per share resulting in gross proceeds of \$6,500,000. The Company executed an underwriting agreement with Northland under which Northland purchased the shares of common stock from the Company at a price of \$1.16875. Net proceeds to the Company under the transaction including fees and expenses were approximately \$5,879,000. Proceeds from the transaction are intended to be used for general corporate purposes.

The Series A Preferred Stock terms referred to above contain anti-dilution provisions which modify the Conversion Price of the Series A Preferred Stock in the event that the Company issues any common stock at a price less than the Conversion Price during the three years after the original issue date of the Series A Preferred Stock. As a result of the Offering, the Conversion Price has been modified from \$2.82 per share to \$2.389 per share. Accordingly, based upon the liquidation value of the preferred stock at June 30, 2013, the number of shares of common stock issuable upon conversion of the Series A Preferred Stock increased from 6,151,034 to 7,260,743.

(4) Bank Financing

On July 31, 2012, the Company entered into a Loan and Security Agreement (the "Loan Agreement") with East West Bank (the "Bank"). Pursuant to the Loan Agreement, the Bank provided the Company with a secured three-year \$3,500,000 term loan (the "Term Loan") which bears interest at 5.5% and contained a 12-month interest-only feature. On May 10, 2013, the Company amended the Loan Agreement which increased the principal to \$5,000,000 and extended the maturity date of the Term Loan to July 31, 2016, with principal payable in 24 equal installments of approximately \$221,000 including interest commencing on August 1, 2014. The interest rate was modified to 5.75%.

The Loan Agreement, as amended, also contains a revolving line-of-credit (the “Revolver”) facility with maximum borrowings of \$2,000,000 and an expiration date of July 31, 2014. Under the amended Loan Agreement, advances under the Revolver bear interest at a floating rate equal to 2.00% above the Bank’s prime rate, with a 3.25% floor on the prime rate, representing an effective rate of 5.25%, as of June 30, 2013. Interest on the loan is payable monthly. The Company is permitted to borrow against eligible accounts receivable as defined under the Revolver according to pre-established criteria. The amount available for borrowing under the Revolver as of June 30, 2013, was \$1,469,000. There were no borrowings under the Revolver as of June 30, 2013.

The obligations under the Loan Agreement, as amended, are secured by a lien on substantially all assets of the Company, excluding intellectual property, provided that, following an event of default, such security interest would also include intellectual property.

The Loan Agreement, as amended, contains customary negative covenants limiting the ability of the Company and its subsidiaries, among other things, to grant liens on the pledged collateral, pay cash dividends, make certain investments and acquisitions, and dispose of assets outside the ordinary course of business. The amended agreement also contains financial covenants, measured quarterly, providing a minimum level of the Company’s tangible net worth, and non-financial covenants with respect to the timing of certain new product approvals. As of June 30, 2013, the Company was in compliance with the Loan Agreement covenants.

In connection with the Loan Agreement, on July 31, 2012, the Company issued to the Bank a warrant to purchase 133,333 shares of Company common stock for a five-year period expiring on July 31, 2017, at an exercise price of \$1.80 per share which approximated the market value of the common stock at the grant date. The warrant was valued at \$145,732, using the Black-Scholes option pricing model with the following assumptions: fair value of the underlying common stock of \$1.80, a weighted-average expected stock price volatility of 75.5%, an expected option life of five years, an average risk-free interest rate of 0.62%, and a 0.0% average dividend yield.

In connection with the amendment dated May 10, 2013, the Company issued to the Bank a warrant to purchase 30,257 shares of common stock for a five-year period expiring on May 10, 2018, at an exercise price of \$1.98 per share which approximated the market value of the common stock at the grant date. The warrant was valued at \$31,878 using the Black-Scholes option pricing model using the following assumptions: fair value of the underlying common stock of \$1.98, a weighted-average expected stock price volatility of 63.6%, an expected warrant life of five years, an average risk-free interest rate of 0.71%, and a 0.0% average dividend yield.

Each of the warrants issued to the Bank were fully vested at time of issuance. The warrant cost is being recorded as a debt discount and recognized as interest expense over the three-year period of the Term Loan using the effective interest method.

The outstanding balance of the bank term loan is as follows:

	June 30, 2013	December 31, 2012
Balance of bank term loan	\$ 5,000,000	\$ 3,500,000
Debt discount	<u>(115,868)</u>	<u>(116,606)</u>
	4,884,132	3,383,394
Current portion	—	697,834
Long-term portion	<u>\$ 4,884,132</u>	<u>\$ 2,685,560</u>

(5) Inventories, Property and Equipment, Intangible and Other Assets

Inventories consist of:

	<u>June 30, 2013</u>	<u>December 31, 2012</u>
Raw materials	\$ 2,577,333	\$ 2,489,750
Work in process	13,343	34,384
Finished goods	858,651	1,019,191
	<u>\$ 3,449,327</u>	<u>\$ 3,543,325</u>

Property and equipment are stated at cost and include FORE-SIGHT cerebral oximetry monitors primarily located at customer sites within the United States. Such equipment is typically held under a no-cost program whereby customers purchase disposable sensors for use with the Company's equipment. The Company retains title to the monitors shipped to its customers under this program. Property and equipment is depreciated using the straight-line method over the estimated useful lives of the assets.

Intangible assets consist of patents issued, patents pending, trademarks, and purchased technology which are recorded at cost. Patents are amortized on a straight-line basis over 20 years. Capitalized costs are amortized over their estimated useful lives.

Intangible and other assets consist of the following:

	<u>June 30, 2013</u>	<u>December 31, 2012</u>
Patents and other assets	\$ 809,608	\$ 714,810
Patents pending	308,266	348,256
Purchased technology	43,893	46,026
Deferred financing costs	159,431	147,931
	<u>1,321,198</u>	<u>1,257,023</u>
Accumulated amortization	<u>(470,394)</u>	<u>(426,778)</u>
	<u>\$ 850,804</u>	<u>\$ 830,245</u>

Amortization expense of intangible and other assets for the six months ended June 30, 2013, was \$52,553. Estimated amortization expense for the calendar year 2013 is \$103,200. Expected amortization expense of intangible and other assets for the next five calendar years and beyond follows:

2014	\$ 76,800
2015	66,500
2016	46,500
2017	21,500
2018	19,900
Thereafter	183,700
	<u>\$ 414,900</u>

The Company reviews its intangibles and other assets for impairment at least annually or whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The Company believes that the carrying amounts of its remaining long-lived assets are fully recoverable.

(6) Principal Products and Services

The Company has categorized its sales of products and services into the following categories:

- Tissue oximetry monitoring products – includes sales of the FORE-SIGHT cerebral monitors, sensors, and accessories.
- Traditional vital signs monitoring products – includes:
 - 1) Vital signs bedside monitors and accessories, incorporating various combinations of measurement parameters for both human and veterinary use. Parameters found in these monitors include the Company's proprietary MAXNIBP non-invasive blood pressure, pulse oximetry, electrocardiography, temperature, and capnography.
 - 2) Blood pressure measurement technology – includes sales to OEM manufacturers of the Company's proprietary MAXNIBP non-invasive blood pressure technology, sold as a discrete module to be included in the OEM customers' own multi-parameter monitors, and related license fees.
 - 3) Supplies and service – includes sales of neonatal intensive care supplies, including electrodes, skin temperature probes, and service repair.

(7) Loss per Common Share Applicable to Common Stockholders

Basic earnings per share is calculated by dividing net loss applicable to common stockholders by the weighted- average number of common shares outstanding for the period. Diluted loss per share reflects the potential dilution that could occur if common stock equivalents such as unvested restricted common shares, outstanding warrants and options, or convertible preferred stock were exercised or converted into common stock. For all periods reported, the Company incurred net losses. Therefore, for each period reported, diluted loss per share is equal to basic loss per share because the effect of including such common stock equivalents or other securities would have been anti-dilutive.

At June 30, 2013, stock options and warrants to purchase 2,007,125 and 1,052,991 shares of common stock, respectively, were excluded from the diluted earnings per share calculation as they would have been anti-dilutive. On an as-converted basis, 6,151,034 shares of common stock pertaining to the private placement of 150,000 shares of Series A convertible and exchangeable preferred stock issued on June 9, 2011, were also excluded as they would have been anti-dilutive.

The following table presents a reconciliation of the numerators and denominators of basic and diluted loss per share:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2013	2012	2013	2012
Net loss	\$ (2,633,869)	\$ (1,649,609)	\$ (4,221,051)	\$ (3,595,701)
Preferred stock dividend accretion	298,333	278,332	591,534	551,877
Net loss applicable to common stockholders	<u>\$ (2,932,202)</u>	<u>\$ (1,927,941)</u>	<u>\$ (4,812,585)</u>	<u>\$ (4,147,578)</u>
Weighted-average shares outstanding, net of unvested restricted common shares - used to compute basic and diluted loss per share applicable to common stockholders	<u>13,425,416</u>	<u>13,260,345</u>	<u>13,408,584</u>	<u>13,239,593</u>

(8) Stock Compensation Expense and Share-based Payment Plans

Stock compensation expense was \$234,687 and \$238,130 and \$463,106 and \$466,778 for the three- and six-month periods ended June 30, 2013 and 2012, respectively.

As of June 30, 2013, the unrecognized stock-based compensation cost related to stock option awards and unvested restricted common stock was \$1,697,000. Such amount, net of estimated forfeitures, will be recognized in operations through the fourth quarter of 2016.

The following table summarizes the Company's stock option information as of and for the six-month period ended June 30, 2013:

	<u>Option Shares</u>	<u>Weighted- Average Exercise Price</u>	<u>Aggregate Intrinsic Value (1)</u>	<u>Weighted-Average Contractual Life Remaining in Years</u>
Outstanding at December 31, 2012	2,007,125	\$ 2.25	\$ 307,406	8.0
Granted	—	—	—	—
Cancelled	—	—	—	—
Exercised	—	—	—	—
Outstanding at June 30, 2013	<u>2,007,125</u>	<u>2.25</u>	<u>18,726</u>	<u>7.5</u>
Exercisable at June 30, 2013	<u>869,166</u>	<u>\$ 2.36</u>	<u>\$ 18,726</u>	<u>6.1</u>
Vested and expected to vest at June 30, 2013	<u>1,973,032</u>	<u>\$ 2.25</u>	<u>\$ 18,726</u>	<u>7.5</u>

- (1) The intrinsic value of a stock option is the amount by which the market value, as of the applicable date, of the underlying stock exceeds the option exercise price.

The exercise period for all outstanding stock options may not exceed ten years from the date of grant. Stock options granted to employees and members of the Board of Directors vest typically not less than three years from the grant date. The Company attributes stock-based compensation cost to operations using the straight-line method over the applicable vesting period.

On June 20, 2013, the Company's stockholders approved an amendment to the CAS Medical Systems, Inc. 2011 Equity Incentive Plan (the "Plan") which increased the maximum number of shares that can be issued under the Plan by 1,000,000 to 2,000,000. Awards that may be granted under the Plan include options, restricted stock and restricted stock units, and other stock-based awards. The purposes of the Plan are to make available to our key employees and directors, certain compensatory arrangements related to growth in value of our stock so as to generate an increased incentive to contribute to the Company's financial success and prosperity; to enhance the Company's ability to attract and retain exceptionally qualified individuals whose efforts can affect the Company's financial growth and profitability; and align, in general, the interests of employees and directors with the interest of our stockholders. As of June 30, 2013, 1,079,950 shares remain available for issuance under the Plan, as amended.

There were no stock options issued during the six months ended June 30, 2013.

During the first quarter of 2013, the Company's President and Chief Executive Officer received a grant of 11,000 shares of common stock in lieu of a cash payment for a portion of his 2012 management bonus.

During the second quarter of 2013, the Company issued 37,266 shares of restricted stock to its non-employee members of the Board of Directors which vest quarterly over 12 months from the date of grant. The grants were intended to approximate \$10,000 in cash value based upon the market price of the Company's stock on the date of grant. The grants are typically issued following our annual shareholders meeting and form a standard part of our Board of Directors annual compensation. As of June 30, 2013, 300,600 restricted shares issued to employees and members of the Board of Directors remain issued and non-vested. The unamortized stock compensation expense associated with the restricted shares at June 30, 2013, was \$276,000 and will be recognized through the first quarter of 2015.

A summary of the restricted shares outstanding and changes for the relevant periods follow:

	Six Months Ended June 30, 2013	Weighted-Average Grant Date Fair-Value
Outstanding at beginning of period	320,476	\$ 2.19
Granted	37,266	1.61
Cancelled	—	—
Vested	(57,142)	2.15
Outstanding at end of period	<u>300,600</u>	<u>\$ 2.12</u>

(9) Short-term Investments

The Company's short-term investments are held in certificates of deposit ("CDs") with maturities greater than three months. These investments are recorded at amortized cost.

(10) Income Taxes

The Company does not expect to record taxable income during its 2013 fiscal year. As such, income tax benefits that may be generated during 2013 would be offset by a deferred income tax asset valuation allowance. Management established the valuation allowance at December 31, 2009, as a result of cumulative pre-tax losses and its estimates of future taxable income. Management has continued to perform the required analysis regarding the realization of our deferred income tax assets concluding that a full valuation allowance is warranted. As of June 30, 2013, the deferred income tax asset valuation allowance balance was \$7,561,000.

(11) Legal Proceedings

On December 29, 2011, Nellcor Puritan Bennett, LLC, ("Nellcor") filed an action against the Company in the United States District Court for the Eastern District of Michigan alleging (i) breach of the settlement agreement with respect to a prior litigation matter between the parties, (ii) violation of the Lanham Act, (iii) common law unfair competition and (iv) trade libel. The complaint requested injunctive relief and unspecified monetary damages, including compensatory damages and reasonable attorneys' fees. On February 24, 2012, the Company answered the complaint and denied substantially all of the claims and set forth certain affirmative defenses. On April 25, 2013, both Nellcor and the Company filed motions for summary judgment on the Lanham Act, unfair competition, and trade libel claims. On June 11, 2013, the Court granted the Company's motion for summary judgment regarding the breach of contract claim and also found that the Company was entitled to attorney's fees in an amount to be determined. If the remaining issues are not resolved at summary judgment, a trial will occur sometime after the Court rules on the pending summary judgment motions. The matter remains pending, and while there can be no assurance as to the ultimate outcome, the Company does not believe at this time that its disposition would result in a material adverse effect on the Company.

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

Certain statements included in this report, including without limitation statements in Management's Discussion and Analysis of Financial Condition and Results of Operations, which are not historical facts, are "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements represent the Company's current expectations regarding future events. The Company cautions that such statements are qualified by important factors that could cause actual results to differ materially from expected results which may be contained in the forward-looking statements. All forward-looking statements involve risks and uncertainties, including, but not limited to, the following: foreign currency fluctuations, regulations and other economic and political factors which affect the Company's ability to market its products internationally, changes in economic conditions that adversely affect demand for the Company's products, potential liquidity constraints, new product introductions by the Company's competitors, increased price competition, rapid technological changes, dependence upon significant customers, availability and cost of components for the Company's products, the impact of any product liability or other adverse litigation, marketplace acceptance for the Company's new products, FDA and other governmental regulatory and enforcement actions, changes in reimbursement levels from third-party payors, changes to federal research and development grant programs presently utilized by the Company, and other factors described in greater detail in the Company's most recent annual report on Form 10-K.

Results of Operations

For the three months ended June 30, 2013, the Company reported a net loss applicable to common stockholders of \$2,932,000, or (\$0.22) per basic and diluted common share, compared to a net loss applicable to common stockholders of \$1,928,000, or (\$0.15) per basic and diluted common share, for the three months ended June 30, 2012.

For the six months ended June 30, 2013, the Company incurred a net loss applicable to common stockholders of \$4,813,000, or (\$0.36) per basic and diluted common share, compared to a net loss applicable to common stockholders of \$4,148,000, or (\$0.31) per basic and diluted common share, for the first six months of 2012.

The Company generated revenues of \$5,042,000 for the three months ended June 30, 2013, a decrease of \$156,000, or 3%, compared to revenues of \$5,198,000 for the three months ended June 30, 2012. The following table provides information with respect to revenues by major category:

Total Revenues (\$000's)

	<u>Three Months Ended June 30, 2013</u>	<u>Three Months Ended June 30, 2012</u>	<u>Increase / (Decrease)</u>	<u>% Change</u>
Tissue Oximetry Monitoring	\$ 2,215	\$ 1,930	\$ 285	15%
Traditional Vital Signs Monitoring	2,827	3,268	(441)	(13%)
	<u>\$ 5,042</u>	<u>\$ 5,198</u>	<u>\$ (156)</u>	<u>(3%)</u>
Domestic Sales	\$ 3,964	\$ 3,834	\$ 130	3%
International Sales	1,078	1,364	(286)	(21%)
	<u>\$ 5,042</u>	<u>\$ 5,198</u>	<u>\$ (156)</u>	<u>(3%)</u>

Tissue oximetry product revenues of \$2,215,000 for the three months ended June 30, 2013, were \$285,000, or 15%, above the \$1,930,000 reported for the same period in the prior year led by increased sensor sales. As of June 30, 2013, the Company's worldwide installed base of oximetry monitors was 804 units, an increase of 26% above the installed base of 638 as of June 30, 2012.

Traditional vital signs monitoring product revenues for the three months ended June 30, 2013, decreased \$441,000, or 13%, to \$2,827,000 from \$3,268,000 reported for the same period in the prior year. Decreases in OEM technology product sales were responsible for the reduction and were partially offset by increases in vital signs monitor sales to U.S. customers.

Sales of all products to the U.S. market accounted for \$3,964,000, or 79%, of the total revenues reported for the three months ended June 30, 2013, an increase of \$130,000 from the \$3,834,000 of U.S. sales reported for the three months ended June 30, 2012. International sales of all products accounted for \$1,078,000, or 21%, of the total revenues reported for the three months ended June 30, 2013, a decrease of \$286,000, or 21%, from the \$1,364,000 reported for the same period of the prior year.

The following table provides information with respect to tissue oximetry revenues:

Tissue Oximetry Revenues (\$000's)

	Three Months Ended June 30, 2013	Three Months Ended June 30, 2012	Increase / (Decrease)	% Change
Sensor Sales	\$ 1,944	\$ 1,722	\$ 222	13%
Monitors & Accessories	271	208	63	30%
	<u>\$ 2,215</u>	<u>\$ 1,930</u>	<u>\$ 285</u>	<u>15%</u>
Domestic Sales	\$ 1,692	\$ 1,586	\$ 106	7%
International Sales	523	344	179	52%
	<u>\$ 2,215</u>	<u>\$ 1,930</u>	<u>\$ 285</u>	<u>15%</u>

Worldwide sales of tissue oximetry products increased 15% for the second quarter of 2013 led by increased sensor sales. Worldwide sensor sales increased 13%, to \$1,944,000 for the second quarter of 2013 from \$1,722,000 for the second quarter of 2012. Domestic tissue oximetry product sales were \$1,692,000, an increase of \$106,000, or 7%, from the \$1,586,000 recorded for the second quarter of 2012. Increases in domestic sensor sales were impacted by lower monitor and accessories sales. International tissue oximetry product sales were \$523,000, an increase of 179,000, or 52%, from the second quarter of 2012 as a result of increases in both monitors and sensor sales.

Total Revenues (\$000's)

	Six Months Ended June 30, 2013	Six Months Ended June 30, 2012	Increase / (Decrease)	% Change
Tissue Oximetry Monitoring	\$ 4,449	\$ 3,634	\$ 815	22%
Traditional Vital Signs Monitoring	6,169	6,973	(804)	(12%)
	<u>\$ 10,618</u>	<u>\$ 10,607</u>	<u>\$ 11</u>	<u>0%</u>
Domestic Sales	\$ 8,189	\$ 8,045	\$ 144	2%
International Sales	2,429	2,562	(133)	(5%)
	<u>\$ 10,618</u>	<u>\$ 10,607</u>	<u>\$ 11</u>	<u>0%</u>

Tissue oximetry product revenues of \$4,449,000 for the six months ended June 30, 2013, were \$815,000, or 22%, above the \$3,634,000 reported for the same period in the prior year reflecting solid gains in monitor and sensor sales.

Traditional vital signs monitoring product revenues for the six months ended June 30, 2013, decreased \$804,000, or 12%, to \$6,169,000 from \$6,973,000 reported for the same period in the prior year as a result of reductions in sales of OEM technology products.

Sales of all products to the U.S. market accounted for \$8,189,000, or 77%, of the total revenues reported for the six months ended June 30, 2013, an increase of \$144,000, or 2%, from the \$8,045,000 of U.S. sales reported for the six months ended June 30, 2012. The increase represents the net effect of higher sales of tissue oximetry products which were mostly offset by lower OEM technology product sales. International sales of all products accounted for \$2,429,000, or 23%, of the total revenues reported for the six months ended June 30, 2013, a decrease of \$133,000, or 5%, from the \$2,562,000 reported for the same period of the prior year. Increases in tissue oximetry sales were offset by reductions in vital signs monitoring sales which occurred during the first quarter of 2013.

The following table provides information with respect to tissue oximetry revenues:

Tissue Oximetry Revenues (\$000's)

	<u>Six Months Ended June 30, 2013</u>	<u>Six Months Ended June 30, 2012</u>	<u>Increase / (Decrease)</u>	<u>% Change</u>
Sensor Sales	\$ 3,802	\$ 3,168	\$ 634	20%
Monitor and Accessories Sales	647	466	181	39%
	<u>\$ 4,449</u>	<u>\$ 3,634</u>	<u>\$ 815</u>	<u>22%</u>
Domestic Sales	\$ 3,485	\$ 2,916	\$ 569	20%
International Sales	964	718	246	34%
	<u>\$ 4,449</u>	<u>\$ 3,634</u>	<u>\$ 815</u>	<u>22%</u>

Worldwide tissue oximetry product sales increased 22% to \$4,449,000 for the first six months of 2013 from \$3,634,000 for the first six months of 2012 reflecting solid gains in monitor and sensor sales both inside and outside of the United States. Domestic tissue oximetry product sales were \$3,485,000, an increase of \$569,000, or 20%, from the \$2,916,000 recorded for the first six months of 2012. International tissue oximetry product sales were \$964,000, an increase of \$246,000, or 34%, from the first six months of 2012.

Gross profit was \$1,918,000, or 38.0% of sales, for the three months ended June 30, 2013, compared to \$2,183,000, or 42.0% of sales for the same period of the prior year. The reduction resulted primarily from the impact of lower sales volumes on manufacturing productivity. Gross profit was \$4,143,000, or 39.0% of sales, for the first six months of 2013 compared to \$4,218,000, or 39.8% of sales, for the first six months of 2012.

Total operating expenses for the three months ended June 30, 2013, increased \$643,000, or 17%, to \$4,490,000 from \$3,847,000 for the three months ended June 30, 2012. Operating expenses for the first six months of 2013 increased \$780,000, or 10%, to \$8,625,000 from \$7,845,000 for the same period of the prior year.

Research and development expenses increased \$80,000, or 8%, to \$1,030,000 for the three months ended June 30, 2013, compared to \$950,000 for the three months ended June 30, 2012. R&D expenses for the three months ended June 30, 2012, were net of \$100,000 of reimbursements from the National Institutes of Health ("NIH"). The Company's NIH grant expired in late 2012, and no further reimbursements are available. R&D expenses increased \$243,000, or 13%, to \$2,082,000 for the six months ended June 30, 2013, compared to \$1,840,000 for the same period of the prior year. NIH reimbursements totaled \$230,000 for the six months ended June 30, 2012.

Selling, general, and administrative ("S,G&A") expenses increased \$564,000, or 19%, to \$3,461,000 for the three months ended June 30, 2013, compared to \$2,897,000 for the three months ended June 30, 2012. The increase in S,G&A for the three months ended June 30, 2013, was primarily related to the recently enacted medical device excise tax and increased legal fees. S,G&A expenses for the six months ended June 30, 2013, were \$6,543,000 compared to \$6,005,000 for the six months ended June 30, 2012, an increase of \$538,000, or 9%. Management expects operating expenses could increase for the duration of the 2013 calendar year primarily due to increases in R&D and selling expenses.

Interest expense of \$77,000 and \$143,000 for the three- and six-month periods ended June 30, 2013, respectively, primarily reflects the Company's term debt agreement with its bank lender executed July 31, 2012, as amended May 10, 2013.

Other income of \$403,000 for the six months ended June 30, 2013, included \$396,000 of income related to the sale and demutualization of one of the Company's commercial insurance providers.

The Company does not expect to record taxable income during its 2013 fiscal year. Income tax benefits that may be generated during 2013 would be offset by a deferred income tax asset valuation allowance.

Management established the valuation allowance as of December 31, 2009, as a result of cumulative pre-tax losses and its estimates of future taxable income. Management has continued to perform the required analysis regarding the realization of our deferred income tax assets concluding that a full valuation allowance is warranted. As of June 30, 2013, the deferred income tax asset valuation allowance balance was \$7,561,000.

Financial Condition, Liquidity and Capital Resources

As of June 30, 2013, the Company's cash and cash equivalents and short-term investments totaled \$6,780,000 compared to \$10,496,000 as of December 31, 2012. Working capital decreased \$1,526,000 to \$11,093,000 as of June 30, 2013, from \$12,619,000 as of December 31, 2012.

Cash used in operations for the six months ended June 30, 2013, was \$5,080,000 compared to cash used in operations of \$3,788,000 for the same period in the prior year. The increase in cash used from operations over the prior year period primarily related to increased net losses and decreases in accounts payable and accrued expenses.

Cash provided by investing activities was \$359,000 for the six months ended June 30, 2013, compared to cash used in investing activities of \$1,012,000 for the same period in the prior year. Short-term investments of \$493,000 for the six-months ended June 30, 2013, pertains to the transfer of funds from fully-matured certificates of deposit classified as short-term investments to the Company's principal operating account. Expenditures for property and equipment of \$467,000 for the six-months ended June 30, 2013, were primarily comprised of manufacturing equipment and FORE-SIGHT cerebral oximeter customer placements. Cash flows from investing activities for the six months ended June 30, 2013, include \$396,000 of cash from the sale and demutualization of the Company's insurance provider during January 2013.

Cash provided by financing activities included \$1,500,000 in proceeds from the Company's amendment of its Loan and Security Agreement (the "Loan Agreement") with East West Bank (the "Bank"). The Company originally entered into the Loan Agreement on July 31, 2012. Pursuant to the Loan Agreement, the Bank provided the Company with a secured three-year \$3,500,000 term loan (the "Term Loan") which bears interest at 5.5% and contained a 12-month interest-only feature. On May 10, 2013, the Company amended the Loan Agreement which increased the principal to \$5,000,000 and extended the maturity date of the Term Loan to July 31, 2016, with principal payable in 24 equal installments of approximately \$221,000 including interest commencing August 1, 2014. The interest rate was modified to 5.75%.

The Loan Agreement, as amended, also contains a revolving line-of-credit (the "Revolver") facility with maximum borrowings of \$2,000,000 and an expiration date of July 31, 2014. Under the amended Loan Agreement, advances under the Revolver bear interest at a floating rate equal to 2.00% above the Bank's prime rate with a 3.25% floor on the prime rate, representing an effective rate of 5.25%, as of June 30, 2013. Interest on the loan is payable monthly. The Company is permitted to borrow against eligible accounts receivable as defined under the Revolver according to pre-established criteria. The amount available for borrowing under the Revolver as of June 30, 2013, was \$1,469,000. There were no borrowings under the Revolver during the six months ended June 30, 2013.

On July 16, 2013, the Company entered into a purchase agreement with Northland Securities, Inc. ("Northland") related to the public offering (the "Offering") of 5,200,000 shares of its common stock at \$1.25 per share resulting in gross proceeds of \$6,500,000. The Company executed an underwriting agreement with Northland under which Northland purchased the shares of common stock from the Company at a price of \$1.16875. Net proceeds to the Company under the transaction including fees and expenses were \$5,879,000. Proceeds from the transaction are intended to be used for general corporate purposes.

Our 2013 business plans call for increased operating expenditures primarily to develop and market our FORE-SIGHT® technology and our other product lines. Our ordinary short-term capital needs are expected to be met from our current cash on hand, the net proceeds from the recently completed Offering, and amounts available under the Loan Agreement.

Critical Accounting Policies and Estimates

The Company's discussion and analysis of financial condition and results of operations are based on the condensed consolidated financial statements. The preparation of these financial statements requires the Company to make estimates and judgments that affect the amounts reported in them. The Company's critical accounting policies and estimates include those related to revenue recognition, the valuations of inventories and deferred income tax assets, measuring stock compensation and warranty costs, determining useful lives of intangible assets, and making asset impairment valuations. The Company bases its estimates on historical experience and on various other assumptions that management believes to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. For additional information about the Company's critical accounting policies and estimates, see Item 7 and Note 2 to the financial statements included in the Company's Form 10-K for the year ended December 31, 2012. There were no significant changes in critical accounting policies and estimates during the three months ended June 30, 2013.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The Company at times has certain exposures to market risk related to changes in interest rates. The Company holds no derivative securities for trading or other purposes and is not subject in any material respect to currency or other commodity risk.

ITEM 4. CONTROLS AND PROCEDURES

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in the Company's Exchange Act reports is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to the Company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure based on the definition of "disclosure controls and procedures" in Rule 13a-15(e). In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management necessarily is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

The Company carried out an evaluation, under the supervision and with the participation of the Company's management, including the Company's Chief Executive Officer and the Company's Chief Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures as of June 30, 2013. Based upon the foregoing evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures were effective as of that date.

There have been no changes in the Company's internal control over financial reporting during the quarter ended June 30, 2013, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Reference is made to the Certifications of the Chief Executive Officer and the Chief Financial Officer about these and other matters attached as Exhibits 31.1, 31.2, and 32.1 to this quarterly report on Form 10-Q.

PART II – OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

On December 29, 2011, Nellcor Puritan Bennett, LLC, (“Nellcor”) filed an action against the Company in the United States District Court for the Eastern District of Michigan alleging (i) breach of the settlement agreement with respect to a prior litigation matter between the parties, (ii) violation of the Lanham Act, (iii) common law unfair competition and (iv) trade libel. The complaint requested injunctive relief and unspecified monetary damages, including compensatory damages and reasonable attorneys’ fees. On February 24, 2012, the Company answered the complaint and denied substantially all of the claims and set forth certain affirmative defenses. On April 25, 2013, both Nellcor and the Company filed motions for summary judgment on the Lanham Act, unfair competition, and trade libel claims. On June 11, 2013, the Court granted the Company’s motion for summary judgment regarding the breach of contract claim and also found that the Company was entitled to attorney’s fees in an amount to be determined. If the remaining issues are not resolved at summary judgment, a trial will occur sometime after the Court rules on the pending summary judgment motions. The matter remains pending, and while there can be no assurance as to the ultimate outcome, the Company does not believe at this time that its disposition would result in a material adverse effect on the Company.

ITEM 5. OTHER INFORMATION

On August 5, 2013, the Company entered into an Employment Agreement with John K. Gamelin (the “Employment Agreement”), the Company’s Vice President of Research and Development. Mr. Gamelin’s employment under the Employment Agreement is “at will” and is terminable at any time by either party, subject to an obligation of the Company to provide separation pay benefits under certain circumstances as described in greater detail below. Mr. Gamelin will receive an annual base salary of One Hundred Ninety Thousand Dollars (\$190,000), which may be subject to increase at the discretion of the Compensation Committee of the Board of Directors of the Company. Mr. Gamelin will also be eligible for an annual bonus with a target equal to 30% of his base salary in the form of cash or Company common stock as determined at the sole discretion of the Compensation Committee of the Board of Directors. Mr. Gamelin will be entitled to participate in all employee benefit programs of the Company applicable to employees of the Company, as such programs may be in effect from time to time.

If the Company terminates Mr. Gamelin’s employment without Serious Cause (as defined in the Employment Agreement) or Mr. Gamelin terminates his employment for Good Reason (as defined in the Employment Agreement), the Company shall pay him a separation pay benefit equal to six (6) months of his base salary. Payment of severance shall be made in equal fixed installments during the period of payment in accordance with the Company’s standard payroll procedures and normal payroll dates then in effect. In the event the value of the aforementioned payments exceeds two times the lesser of Mr. Gamelin’s annualized compensation or the maximum amount that may be taken into account for qualified plan purposes (in each case, as determined in accordance with Treasury Regulation Section 1.409A-1(b)(9)(iii)(A)), the excess shall not be paid as provided above, but instead shall be withheld and paid on the first regularly scheduled payroll date immediately following the date that is six months after the separation from service date, without adjustment for the delay in payment.

If the Company terminates Mr. Gamelin’s employment without Serious Cause, or he terminates employment with the Company for Good Reason, and, in either case, his employment is terminated within the period beginning on the date that a Change of Control (as defined in the Employment Agreement) is formally proposed to the Company’s Board of Directors and ending on the six-month anniversary of the date on which such Change of Control occurs, the Company will pay Mr. Gamelin a separation pay benefit equal to six (6) months of his base salary. Payment of such severance shall be made in equal fixed installments during the period of payment in accordance with the Company’s standard payroll procedures and normal payroll dates then in effect. In the event the value of the payments exceeds two times the lesser of Mr. Gamelin’s annualized compensation or the maximum amount that may be taken into account for qualified plan purposes (in each case, as determined in accordance with Treasury Regulation Section 1.409A-1(b)(9)(iii)(A)), the excess shall not be paid as provided above, but instead shall be withheld and paid on the first regularly scheduled payroll date immediately following the date that is six months after the separation from service date, without adjustment for the delay in payment.

In the event that the provisions of Internal Revenue Code Section 280G relating to “excess parachute payments” shall be applicable to any payment or benefit received or to be received by Mr. Gamelin, then the total amount of payments or benefits payable (the “Payments”) shall be reduced to an amount which would result in no portion of the Payments being subject to the excise tax imposed pursuant to Section 4999 of the Internal Revenue Code.

The Employment Agreement also contains customary confidentiality covenants and covenants not to compete or solicit during the term of employment or in the twelve month period thereafter.

The foregoing description of the Employment Agreement does not purport to be complete and is qualified in its entirety by reference to the Employment Agreement, a copy of which is filed as Exhibit 10.1 hereto and incorporated herein by reference.

ITEM 6. EXHIBITS

- 10.1 Employment Agreement with John K. Gamelin dated August 5, 2013
- 10.2 Employment Agreement with Paul Benni dated May 1, 2008
- 31.1 Certification pursuant to Rule 13a-14(a) of Thomas M. Patton, President and Chief Executive Officer
- 31.2 Certification pursuant to Rule 13a-14(a) of Jeffery A. Baird, Chief Financial Officer
- 32.1 Certification pursuant to 18 U.S.C. 1350 of Periodic Financial Report of Thomas M. Patton, President and Chief Executive Officer, and Jeffery A. Baird, Chief Financial Officer
- 101 Interactive data files pursuant to Rule 405 of Regulation S-T.

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.

CAS MEDICAL SYSTEMS, INC.

(Registrant)

/s/ Thomas M. Patton

By: Thomas M. Patton
President and Chief Executive Officer

Date: August 7, 2013

/s/ Jeffery A. Baird

By: Jeffery A. Baird
Chief Financial Officer

Date: August 7, 2013

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT, entered into as of August 5, 2013, by and between CAS Medical Systems, Inc., a Delaware corporation (the "Company", which term includes any successor to CAS Medical Systems, Inc., by merger or otherwise), and **John K. Gamelin** (the "Employee.")

WITNESSETH:

WHEREAS, the Company has appointed Employee to serve as Vice President of Research and Development, which position Employee has assumed effective November 26, 2012.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and other good and valuable consideration, the parties hereto agree as follows:

Section 1. Employment

The Company will employ the Employee, and the Employee will perform services for the Company and its subsidiaries, on the terms and conditions set forth in this Agreement and for the period specified in Section 3 hereof ("Term of Employment").

Section 2. Duties

The Employee, during the Term of Employment, will serve the Company as its Vice President of Research and Development or such other title, duties and responsibilities as are assigned to him by the Chief Executive Officer of the Company. The Employee will perform his duties hereunder faithfully and to the best of his abilities and in furtherance of the business of the Company and its subsidiaries, and will devote his full business time, energy, attention and skill to the business of the Company and its subsidiaries and to the promotion of its interests, except as otherwise agreed by the Company.

Section 3. Term of Employment

The Employee's employment hereunder shall be "at will" and is terminable at any time by either party, subject to the provisions of Sections 8 and 9 hereof.

Section 4. Salary and Bonus

(a) The Employee will receive, as compensation for his duties and obligations to the Company pursuant to this Agreement, a base salary at the annual rate of One Hundred and Ninety Thousand (\$190,000.00) Dollars, payable in substantially equal installments in accordance with the Company's payroll practice. It is agreed between the parties that the Company will review the base annual salary from time to time and in light of such review may (but will not be obligated to), in the discretion of the Compensation Committee of the Board of Directors of the Company, increase such annual base salary.

(b) Bonus. During the Term of Employment, the Employee will be eligible for an annual bonus with a target equal to thirty (30) percent of his actual salary payable in the form of cash or Company common stock as determined at the sole discretion of the Compensation Committee of the Board of Directors. Any bonus payable hereunder shall be calculated after the close of the end of the calendar year, and thereafter paid in a lump sum by no later than the 15th day of the third month following the end of the calendar year in which the right to the bonus is no longer subject to a substantial risk of forfeiture (as defined for purposes of Internal Revenue Code Section 409A, including Treasury Regulations Section 1.409A-1(d)).

Section 5. Employee Benefits

Subject to any applicable probationary or similar periods, during the Term of Employment, the Employee will be entitled to participate in all employee benefit programs of the Company as such programs may be in effect from time to time. Subject to any applicable probationary or similar periods, during the Term of Employment, the Employee will also be entitled to participate in all retirement programs of the Company for which current employees are eligible, as such programs may be in effect from time to time (including the Company's 401(k) plan).

Section 6. Business Expenses

All reasonable travel and other out-of-pocket expenses incidental to the rendering of services by the Employee hereunder will be paid by the Company and if expenses are paid in the first instance by the Employee, the Company will reimburse him therefor upon presentation of proper invoices; subject in each case to compliance with the Company's reimbursement policies and procedures. All reimbursements will be paid in the same taxable year in which the expense is incurred; provided that expenses incurred toward the end of the calendar year that cannot administratively be reimbursed before the year end shall be reimbursed by no later than March 1st of the following calendar year.

Section 7. Vacations and Sick Leave

The Employee will be entitled to holidays, 20 days of accrued vacation and reasonable sick leave each year, in accordance with policies of the Company, as determined by the Board of Directors.

Section 8. Termination

(a) Termination of Agreement by the Company for Convenience. The Company may terminate the Employee's employment and the Term of Employment for convenience at any time upon written notice to the Employee, which termination shall be effective upon delivery of such notice unless such notice specifically provides for termination to be effective at a later date.

(b) Termination of Employment by the Company for Serious Cause. In the event of Serious Cause (as defined below), the Company may terminate the Employee's employment and the Term of Employment upon written notice of such termination stating the Serious Cause upon which the Company relies for its termination. The Employee's employment and the Term of Employment will be terminated effective as of the date specified in such notice, which will in no event be earlier than the effective date of such notice as provided in Section 17.

"Serious Cause" means (i) the willful and continued failure by the Employee to perform substantially his duties hereunder, other than by reasons of health, after demand for substantial performance is delivered by the Company that identifies the manner in which the Company believes the Employee has not substantially performed his duties; (ii) the Employee will have been indicted by any federal, state or local authority in any jurisdiction for, or will have pleaded guilty or nolo contendere to, an act constituting a felony, (iii) the Employee will have habitually abused any controlled substance (such as narcotics or alcohol), or (iv) the Employee will have (A) engaged in acts of fraud, material dishonesty or gross misconduct during the Term of Employment regardless of whether such acts were in connection with the business of the Company, or (B) committed a material breach of this Agreement.

(c) Termination of Employment by Employee for Good Reason. The Employee may terminate his employment and the Term of Employment in the event of "Good Reason." Termination for Good Reason means a resignation of employment and Separation from Service (as such term is defined for purposes of Internal Revenue Code Section 409A and Section 20(c) herein), within six (6) months following the initial existence of one or more of the following conditions arising without the Employee's written consent:

- (i) a reduction greater than five (5) percent in the aggregate in the Employee's base salary or benefits, other than an across-the-board reduction affecting substantially all members of senior management;
- (ii) a material reduction in the Employee's duties and significant responsibilities hereunder following the occurrence of a Change of Control, as defined in Section 1 O(b) hereof (not including reasonable changes in title or in corporate structure); or
- (iii) a material breach of this Agreement by the Company (which shall include a failure to make payments due hereunder); provided, in any such case, that (1) the Employee shall provide, pursuant to Section 17 hereof, a prior written notice specifying the reasons for his termination to the Company's Board of Directors within sixty (60) days after the initial existence of the condition, and give Company an opportunity to cure such condition (if curable), and (2) "Good Reason" shall exist only if the Company shall fail to cure such condition within thirty-one (31) days after its receipt of such prior written notice. In addition, until the actual Separation from Service, the Employee must remain willing and able to continue to perform services in accordance with the terms of this Agreement and the Employee must not be in breach of any of the Employee's obligations hereunder.

(d) Effect of Termination for Serious Cause or Without Good Reason. In the event of termination of the Employee's employment and the Term of Employment by the Company for Serious Cause or by the Employee without Good Reason, the Employee will forfeit all bonus amounts accruing for the then current fiscal year, and the Company will be liable to the Employee only for (i) any accrued but unpaid base salary and vacation, (ii) any earned but unpaid bonus from a prior fiscal year (subject, if applicable, to the terms of any deferred compensation arrangements), and (iii) reimbursement of business expenses incurred prior to the date of termination.

(e) Death, Retirement, Disability. In the event of the death, Retirement or Disability of the Employee, the Employee's employment and Term of Employment will be terminated as of the date of such death, Retirement or Disability and the Company will pay the Employee, or the Employee's estate or legal representative, as appropriate, (i) any accrued but unpaid base salary and vacation, (ii) any earned but unpaid bonus from a prior fiscal year (subject, if applicable, to the terms of any deferred compensation arrangements), and (iii) reimbursement of business expenses incurred, but unpaid, prior to the date of termination.

"Disability" means the Employee's inability, for reasons of health, to carry out the functions of his position for a total of one hundred eighty (180) days during any twelve (12) month period. "Retirement" will mean retirement from employment upon or after attaining age sixty-five (65) or such earlier age agreed to by the Company.

(f) Effect of Termination Without Serious Cause or With Good Reason. If (i) the Company terminates the Employee's employment without Serious Cause, or (ii) the Employee terminates his employment for Good Reason, the Company shall pay the Employee a separation pay benefit (the "Severance Payment") equal to six (6) months of the Employee's annual rate of base salary (as of the Employee's Separation from Service date) as described below.

- (1) Payment of the Severance Payments shall commence as of the Employee's Separation from Service date, and shall continue thereafter in equal fixed installments over a six month period in accordance with the Company's standard payroll procedures and normal payroll dates then in effect.
- (2) In the event the value of the Severance Payments shall exceed two times the lesser of the Employee's annualized compensation or the maximum amount that may be taken into account for qualified plan purposes (in each case, as determined in accordance with Treasury Regulation Section 1.409A-1 (b)(9)(iii)(A)), the excess shall not be paid as provided in (1), above, but instead shall be withheld and paid on the first regularly scheduled payroll date immediately following the date that is six months after the Employee's Separation from Service date, without adjustment for the delay in payment.
- (3) In no event shall Severance Payments be accelerated, nor shall the Employee be eligible to defer payment of Severance Payments to a later date.
- (4) If COBRA continuation coverage under any Company healthcare plan is elected by the Employee, the Company shall provide such coverage on the same terms with respect to employee cost and employer subsidy as was being made available to the Employee immediately before the Termination provided however, that the Company may elect not to provide such healthcare benefit in the event that by doing so the Company would be subject to a penalty under any applicable laws or regulations.

In addition, the Employee will be entitled to prompt payment of (A) any accrued but unpaid salary and vacation, (B) any earned but unpaid bonus from a prior fiscal year (subject, if applicable, to the terms of any deferred compensation arrangements), and, if the Separation of Service occurs at a time when more than one-half of the performance measuring for an annual performance bonus has elapsed, the Employee shall be eligible for a pro rate amount of the performance bonus Employee would have otherwise earned had he remained employed by the Company for the entire performance period paid (notwithstanding any language in this agreement to the contrary) as provided in the normal course under Section 5 above, and (C) reimbursement of business expenses incurred prior to the date of termination, and all of the Employee's equity linked grants (e.g., stock options, restricted stock) shall immediately accelerate and vest in full.

All payments under Section 8 or Section 9 of (i) any accrued but unpaid base salary and vacation, (ii) any earned but unpaid bonus from a prior fiscal year, and (iii) reimbursement of business expenses incurred prior to the date of termination shall be paid in a single sum on the first regularly scheduled payroll date immediately following the Employee's separation from service.

For purposes of this Agreement, "termination of employment", "retirement" and words of similar import shall mean the Employee's Separation from Service as defined in Section 409A of the Code and final regulations issued thereunder.

(g) No Other Obligations. In the event of the termination of the Employee's employment and the Term of Employment pursuant to Sections 9 or 10 herein, the Company will have no obligations to the Employee other than those set forth in Sections 9 and 10 herein.

Section 9. Change of Control

(a) Effect of Termination. If (i) the Company terminates the Employee's employment without Serious Cause, or (ii) the Employee terminates employment with the Company for Good Reason, and, in the case of either (i) or (ii) above, the Employee's employment is terminated (A) under circumstances constituting an Involuntary Separation from Service within the meaning of Treasury Regulations Section 1.409A-1(n) and (B), and as defined in Section 20(c) herein, within the period beginning on the date that a Change of Control is formally proposed to the Company's Board of Directors and ending on the sixth month anniversary of the date on which such Change of Control occurs, the Company shall pay the Employee a separation pay benefit (the "Change of Control Severance Payment") equal to six (6) months of the Employee's annual base salary (as of the Employee's Separation from Service date) and will make available a subsidized healthcare benefit, as described below.

- (1) Payment of the Change of Control Severance Payments shall commence as of the Employee's Separation from Service date, and shall continue thereafter in equal fixed installments over a one year period in accordance with the Company's standard payroll procedures and normal payroll dates then in effect.
- (2) In the event the value of the Severance Payments shall exceed two times the lesser of the Employee's annualized compensation or the maximum amount that may be taken into account for qualified plan purposes (in each case, as determined in accordance with Treasury Regulation Section 1.409A-1 (b)(9)(iii)(A)), the excess shall not be paid as provided in (1), above, but instead shall be withheld and paid on the first regularly scheduled payroll date immediately following the date that is six months after the Employee's Separation from Service date, without adjustment for the delay in payment.
- (3) In no event shall Change of Control Severance Payments be accelerated, nor shall the Employee be eligible to defer payment of Change of Control Severance Payments to a later date.
- (4) If COBRA continuation coverage under any Company healthcare plan is elected by the Employee, the Company shall provide such coverage on the same terms with respect to employee cost and employer subsidy as was being made available to the Employee immediately prior to his Separation from Service for the period of the COBRA coverage or one year, whichever is shorter.

In addition, the Employee will be entitled to prompt payment of (A) any accrued but unpaid salary and vacation, (B) any earned but unpaid bonus from a prior fiscal year (subject, if applicable, to the terms of any deferred compensation arrangements), and, if the Separation of Service occurs at a time when more than one-half of the performance measuring for an annual performance bonus has elapsed, the Employee shall be eligible for a pro rate amount of the performance bonus Employee would have otherwise earned had he remained employed by the Company for the entire performance period paid (notwithstanding any language in this agreement to the contrary) as provided in the normal course under Section 5 above, and (C) reimbursement of business expenses incurred prior to the date of termination.

If any portion of the payments which the Employee has the right to receive from the Company, or any affiliated entity or successor, hereunder would constitute "excess parachute payments" (as defined in Section 280G of the Internal Revenue Code) subject to the excise tax imposed by Section 4999 of the Internal Revenue Code, such excess parachute payments shall be reduced to the largest amount that will result in no portion of such excess parachute payments being subject to the excise tax imposed by Section 4999 of the Internal Revenue Code. In the event a reduction must be in accordance with this paragraph, Change in Control Severance Payments shall be reduced to the extent necessary.

The Employee will not be entitled to any benefits or other entitlements under this section unless a Change of Control actually occurs. Any amounts payable pursuant to this Section 9 shall not duplicate amounts payable under Section 9 and vice versa.

(b) Change of Control. A "Change of Control" of the Company will be deemed to have occurred if (i) any "person" (as such term is defined in Section 3(a)(9) and as used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934 (the "Exchange Act"), excluding the Company or any of its subsidiaries, a trustee or any fiduciary holding securities under an employee benefit plan of the Company or any of its subsidiaries, an underwriter temporarily holding securities pursuant to an offering of such securities or a corporation owned, directly or indirectly, by shareholders of the Company in substantially the same proportion as their ownership of the Company, becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing an increase from less than Twenty Percent (20%) to Fifty Percent (50%) or more of the combined voting power of the Company's then outstanding securities ("Voting Securities"); (ii) during any period of not more than two (2) years, individuals who constitute the Board of Directors of the Company (the "Board") as of the beginning of the period and any new director (other than a director designated by a person who has entered into an agreement with the Company to effect a transaction described in clause (i) or (iii) of this sentence) whose election by the Board or nomination for election by the Company's shareholders was approved by a vote of at least two-thirds (2/3) of the directors then still in office who either were directors at such time or whose election or nomination for election was previously so approved, cease for any reason to constitute a majority thereof; (iii) the stockholders of the Company approve a merger, consolidation or reorganization or a court of competent jurisdiction approves a scheme or arrangement of the Company, other than a merger, consolidation, reorganization or scheme which would result in the Voting Securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into Voting Securities of the surviving entity) at least Fifty Percent (50%) of the combined voting power of the Voting Securities of the Company or such surviving entity outstanding immediately after such merger, consolidation, reorganization or scheme or arrangement, and such transaction is completed; or (iv) the stockholders of the Company approve a plan of complete liquidation of the Company or any agreement for the sale of substantially all of the Company's assets, and such transaction is completed.

Section 10. Agreement Not to Compete or Solicit

(a) Covenant Not to Compete. In exchange for the equity compensation provided commensurate with Employee's appointment as Vice President of Research and Development, and in further consideration of the execution of this Agreement, the Employee hereby covenants and agrees that at no time during the Term of Employment, nor for a period of twelve (12) months immediately following the termination of the Employee's employment for any reason, will he for himself or on behalf of any other person or entity, directly or indirectly, provide any service (whether as employee, consultant, owner or otherwise) to any person or entity engaged in the business of developing, marketing or selling non-pulsatile tissue oxygenation measurement products, or other patient monitoring products that provide the same parameter as that provided by and competitive with a product offered by the Company at the time of such termination of employment. Notwithstanding the preceding sentence, the Employee will not be prohibited from owning less than one percent (1 %) of any publicly traded corporation, whether or not such corporation is in competition with the Company.

(b) Non-Solicitation. In exchange for the equity compensation provided commensurate with the Employee's appointment as Vice President of Research and Development, and in further consideration of the execution of this Agreement, the Employee hereby covenants and agrees that, at all times during the Term of Employment and for a period of twelve (12) months immediately following the termination thereof, the Employee will not directly or indirectly engage any person or entity, or seek to engage any person or entity, that is employed by, an advisor or consultant to, or a selling agent or representative of the Company or any of its subsidiaries, to be an employee, consultant, advisor or selling agent or representative for any other business entity.

Section 11. Confidential Information

The Employee agrees to keep secret and retain in the strictest confidence all confidential matters which relate to the Company or any affiliate of the Company, including, without limitation, customer lists, client lists, trade secrets, pricing policies and other business affairs of the Company and any affiliate of the Company learned by him from the Company or any such affiliate or otherwise before or after the date of this Agreement, and not to disclose any such confidential matter to anyone outside the Company, or any of its affiliates, whether during or after his period of service with the Company, except as may be required in the course of a legal or governmental proceeding. Upon request by the Company, the Employee agrees to deliver promptly to the Company upon termination of his services for the Company, or at any time thereafter as the Company may request, all Company or affiliate memoranda, notes, records, reports, manuals, drawings, designs, computer files in any media and other documents (and all copies thereof) relating to the Company's or any affiliate's business and all property of the Company or any affiliate associated therewith, which he may then possess or have under his control.

Section 12. Remedy

(a) Should the Employee engage in or perform, either directly or indirectly, any of the acts prohibited by Sections 10 or 11 hereof, it is agreed that any and all severance payments and related benefits hereunder shall immediately terminate and the Company will also be entitled to full injunctive relief, to be issued by any competent court of equity, enjoining and restraining the Employee and each and every other person, firm, organization, association, or corporation concerned therein, from the continuance of such violative acts. The foregoing remedies available to the Company will not be deemed to limit or prevent the exercise by the Company of any or all further rights and remedies which may be available to the Company hereunder or at law or in equity.

(b) The Employee acknowledges and agrees that the covenants contained in this Agreement are fair and reasonable in light of the consideration paid hereunder, and the invalidity or unenforceability of any particular provision, or part of any provision, of this Agreement will not affect the other provisions or parts hereof. If any provision hereof is determined to be invalid or unenforceable and if any such provision will be so determined to be invalid or unenforceable by reason of the duration or geographical scope of the covenants contained therein, such duration or geographical scope, or both, will be reduced to a duration or geographical scope solely to the extent necessary to cure such invalidity.

Section 13. Successors and Assigns

This Agreement will be binding upon and inure to the benefit of the Employee, his heirs, executors, administrators and beneficiaries, and the Company and its successors and assigns.

Section 14. Governing Law

This Agreement will be governed by and construed and enforced in accordance with the laws of the State of Connecticut, without reference to rules relating to conflicts of law.

Section 15. Entire Agreement/Termination of Agreement

This Agreement constitutes the full and complete understanding and agreement of the parties and supersedes all prior understandings and agreements as to employment of the Employee. This Agreement cannot be amended, changed, or modified or without the written consent of the parties hereto.

Any notice, report, request or other communication given under this Agreement will be written and will be effective upon delivery when delivered personally, by overnight courier or by fax. Unless otherwise notified by any of the parties, notices will be sent to the parties as follows: (i) if to the Employee, at the address set forth in the Company's records, and (ii) if to the Company, to CAS Medical Systems, Inc., 44 East Industrial Road, Branford, CT 06405, Attention: President and CEO.

Section 16. Waiver of Breach

The waiver of either party of a breach of any term of this Agreement will not operate nor be construed as a waiver of any subsequent breach thereof.

Section 17. Notices

Any notice, report, request or other communication given under this Agreement will be written and will be effective upon delivery when delivered personally, by overnight courier or by fax. Unless otherwise notified by any of the parties, notices will be sent to the parties as follows: (i) if to the Employee, at the address set forth in the Company's records, and (ii) if to the Company, to CAS Medical Systems, Inc., 44 East Industrial Road, Branford, CT 06405, Attention: President and CEO.

Section 18. Severability

If anyone or more of the provisions contained in this Agreement will be invalid, illegal or unenforceable in any respect under any applicable law, the validity, legality and enforceability of the remaining provisions contained herein will not in any way be affected or impaired thereby.

Section 19. Counterparts

This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original but all of which together will constitute one and the same instrument. Delivery of signatures by facsimile or electronic image shall be valid for all purposes hereunder.

Section 20. Internal Revenue Code Section 409A Compliance.

(a) The parties hereto recognize that certain provisions of this Agreement may be affected by Section 409A of the Internal Revenue Code and guidance issued thereunder, and agree to amend this Agreement, or take such other action as may be necessary or advisable, to comply with Section 409A.

(b) Notwithstanding anything herein to the contrary, it is expressly understood that at any time the Company (or any successor or related employer treated as the service recipient for purposes of Internal Revenue Code Section 409A) is publicly traded on an established securities market (as defined for purposes of Internal Revenue Code Section 409A), if a payment or provision of an amount or benefit constituting a deferral of compensation is to be made pursuant to the terms of this Agreement to the Employee on account of a Separation from Service at a time when the Employee is a Specified Employee (as defined for purposes of Internal Revenue Code Section 409A(a)(2)(B)(i)), such deferred compensation shall not be paid to the Employee prior to the date that is six (6) months after the Separation from Service or as otherwise permitted under Treasury Regulations Section 1.409A-3(i)(2).

(c) For purposes of this Agreement, the following definitions shall apply:

(i) "Separation from Service" means, generally, a termination of employment with the Company (or any successor or related employer treated as the service recipient for purposes of Internal Revenue Code Section 409A), and shall have the same meaning as such term has for purposes of Internal Revenue Code Section 409A (including Treasury Regulation Section 1.409A-1(h)).

(ii) "Involuntary Separation from Service" means a Separation from Service due to the independent exercise of the unilateral authority of the Company (or any successor or related employer treated as the service recipient for purposes of Internal Revenue Code Section 409A) to terminate the Employee's employment, other than due to the Employee's implicit or explicit request, where the Employee was willing and able to continue employment with the Company. Notwithstanding the foregoing, a termination for Good Reason may constitute an Involuntary Separation from Service. Involuntary Separation from Service shall have the same meaning as such term has for purposes of Internal Revenue Code Section 409A (including Treasury Regulation Section 1.409A-1(n)).

~ Signature Page Follows ~

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

The Company:

CAS MEDICAL SYSTEMS, INC.

By: /s/ Thomas M. Patton
Name: Thomas M. Patton
Title: President and CEO

Employee: /s/ John K. Gamelin
John K. Gamelin

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT, entered into this 1st day of May, 2008, by and between CAS Medical Systems, Inc., a Delaware corporation (the "Company"), and Paul Benni (hereinafter called the "Employee").

WITNESSETH:

WHEREAS, the Company desires that the Employee serve as Chief Scientific Officer of the Company and the Employee is willing to serve the Company in such capacity.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and other good and valuable consideration, the parties hereto agree as follows:

Section 1. Employment

Effective as of May 1, 2008, the Company will employ the Employee and the Employee will perform services for the Company on the terms and conditions set forth in this Agreement and for the period specified in Section 3 hereof ("Term of Employment").

Section 2. Duties

The Employee, during the Term of Employment, will serve the Company as its Chief Scientific Officer. The Employee shall not be deemed an "executive officer" of the Company for SEC reporting purposes. The Employee will have such duties and responsibilities as are assigned to him by the President and Chief Executive Officer of the Company commensurate with his positions as Chief Scientific Officer of the Company. The Employee will perform his duties hereunder faithfully and to the best of his abilities and in furtherance of the business of the Company, and will devote his full business time, energy, attention and skill to the business of the Company and to the promotion of its interests, except as otherwise agreed by the Company. The Employee warrants and represents that he is free to enter into this Agreement and is not restricted by any prior or existing agreement and the Company may rely on such representation in entering into this Agreement.

Section 3. Term of Employment

The Employee's employment hereunder shall be "at will" and is terminable at any time by either party, subject to the provisions of Section 9 hereof.

Section 4. Salary

The Employee will receive, as compensation for his duties and obligations to the Company pursuant to this Agreement, a base salary at the annual rate of One Hundred Twelve Thousand Dollars (\$112,000), payable in substantially equal installments in accordance with the Company's payroll practice. It is agreed between the parties that the Company will review the base annual salary annually and in light of such review may (but will not be obligated to), at the discretion of the Company, increase such annual base salary taking into account any change in the Employee's responsibilities, increases in the cost of living, performance by the Employee, and other pertinent factors.

Section 5. Bonus

During the Term of Employment, the Employee may be eligible for an annual bonus in the form of cash or Company common stock as determined at the sole discretion of the Company.

Section 6. Employee Benefits

Subject to any applicable probationary or similar periods, during the Term of Employment, the Employee will be entitled to participate in all employee benefit programs of the Company, as such programs may be in effect from time to time. Subject to any applicable probationary or similar periods, during the Term of Employment, the Employee will also be entitled to participate in all retirement programs of the Company for which current employees are eligible, as such programs may be in effect from time to time (including the Company's 401(k) plan).

Section 7. Business Expenses

All reasonable travel and other out-of-pocket expenses incidental to the rendering of services by the Employee hereunder will be paid by the Company and if expenses are paid in the first instance by the Employee, the Company will reimburse him therefor upon presentation of proper invoices; subject in each case to compliance with the Company's reimbursement policies and procedures.

Section 8. Vacations and Sick Leave

The Employee will be entitled to holidays, reasonable vacation and reasonable sick leave each year, in accordance with policies of the Company.

Section 9. Termination

(a) Termination by the Company for Serious Cause. In the event of Serious Cause (as defined below), the Company may terminate the Employee's employment and the Term of Employment upon written notice of such termination stating the Serious Cause upon which the Company relies for its termination. The Employee's employment and the Term of Employment will be terminated effective as of the date specified in such notice, which will in no event be earlier than the effective date of such notice as provided in Section 18.

"Serious Cause" means (i) the willful and continued failure by the Employee to perform substantially his duties hereunder, other than by reasons of health, after demand for substantial performance is delivered by the Company that identifies the manner in which the Company believes the Employee has not substantially performed his duties; (ii) the Employee will have been indicted by any federal, state or local authority in any jurisdiction for, or will have pleaded guilty or nolo contendere to, an act constituting a felony, (iii) the Employee will have habitually abused any controlled substance (such as narcotics or alcohol), or (iv) the Employee will have (A) engaged in acts of fraud, material dishonesty or gross misconduct in connection with the business of the Company, or (B) committed a material breach of this Agreement.

(b) Termination by Employee for Good Reason. The Employee may terminate his employment and the Term of Employment in the event of Good Reason (as defined below) upon thirty (30) days' prior written notice of such termination stating the Good Reason upon which the Employee relies for his termination. The Employee's employment and the Term of Employment will be terminated effective as of the date specified in such notice, which in no event will be earlier than the effective date of such notice as provided in Section 18.

"Good Reason" means (i) a material breach of this Agreement by the Company, such as a reduction in the Employee's salary or benefits other than an across-the-board reduction of benefits affecting all members of senior management or (ii) the Company requires the Employee to change the location of the Employee's principal office, so that Employee will be based at a location more than thirty miles from the location of Employee's current principal office (i.e., the Company's executive offices located at 44 East Industrial Road, Branford, Connecticut).

(c) Effect of Termination for Serious Cause or Without Good Reason. In the event of termination of the Employee's employment and the Term of Employment by the Company for Serious Cause or by the Employee without Good Reason, the Employee will forfeit all bonus amounts for the then current fiscal year, and the Company will be liable to the Employee only for (i) any accrued but unpaid base salary and vacation, (ii) any earned but unpaid bonus from a prior fiscal year (subject, if applicable, to the terms of any deferred compensation arrangements), and (iii) reimbursement of business expenses incurred prior to the date of termination.

(d) Death, Retirement, Disability. In the event of the death, Retirement or Disability of the Employee, the Employee's employment and Term of Employment will be terminated as of the date of such death, Retirement or Disability and the Company will pay the Employee, or the Employee's estate or legal representative, as appropriate, (i) any accrued but unpaid base salary and vacation, (ii) any earned but unpaid bonus from a prior fiscal year (subject, if applicable, to the terms of any deferred compensation arrangements), and (iii) reimbursement of business expenses incurred prior to the date of termination.

“Disability” means the Employee’s inability, for reasons of health, to carry out the functions of his position for a total of one hundred eighty (180) days during any twelve (12) month period. “Retirement” will mean retirement from employment upon or after attaining age sixty-five (65) or such earlier age agreed to by the Company.

(e) Effect of Termination Without Serious Cause or With Good Reason. If (i) the Company terminates the Term of Employment and the Employee’s employment herein without Serious Cause, or (ii) the Employee terminates the Term of Employment and his employment hereunder for Good Reason, the Company will continue to pay the Employee his then-current base salary provided under this Agreement for a period of six (6) months from the date of such termination. In addition, the Employee will be entitled to prompt payment of (A) any accrued but unpaid salary and vacation, (B) any earned but unpaid bonus from a prior fiscal year (subject, if applicable, to the terms of any deferred compensation arrangements), (C) the Company’s health benefit plans (with standard employee payment in an amount not to exceed the payment level immediately prior to termination) for the period of six (6) months, and (D) reimbursement of business expenses incurred prior to the date of termination.

(f) No Other Obligations. In the event of the termination of the Employee’s employment and the Term of Employment pursuant to Sections 9 herein, the Company will have no obligations to the Employee other than those set forth in Sections 9 herein.

Section 10. Agreement Not to Compete or Solicit

(a) Covenant Not to Compete. The Employee hereby covenants and agrees that at no time during the Term of Employment nor for a period of six (6) months immediately following the termination of the Employee’s employment will he for himself or on behalf of any other person, partnership, company or corporation, directly or indirectly, acquire any financial or beneficial interest in (except as provided in the next sentence), provide consulting or other services to, be employed by, or own, manage, operate or control any entity engaged in the medical device business substantially similar to the business engaged in by the Company or its subsidiaries at the time of such termination of employment. For avoidance of doubt, work at an academic institution that does not involve the commercial development of medical device products substantially similar to those made by the Company or its subsidiaries shall not constitute a breach of this Section 10(a). Notwithstanding the first sentence of this Section 10(a), the Employee will not be prohibited from owning less than one percent (1%) of any publicly traded corporation, whether or not such corporation is in competition with the Company.

(b) Non-Solicitation. The Employee hereby covenants and agrees that, at all times during the Term of Employment and for a period of six (6) months immediately following the termination thereof, the Employee will not directly or indirectly employ or seek to employ any person or entity employed at that time by the Company or any of its subsidiaries, or otherwise encourage or entice such person or entity to leave such employment.

Section 11. Confidential Information

The Employee agrees to keep secret and retain in the strictest confidence all confidential matters which relate to the Company or any affiliate of the Company, including, without limitation, customer lists, client lists, trade secrets, pricing policies and other business affairs of the Company and any affiliate of the Company learned by him from the Company or any such affiliate or otherwise before or after the date of this Agreement, and not to disclose any such confidential matter to anyone outside the Company, or any of its affiliates, whether during or after his period of service with the Company, except as may be required in the course of a legal or governmental proceeding. Upon request by the Company, the Employee agrees to deliver promptly to the Company upon termination of his services for the Company, or at any time thereafter as the Company may request, all Company or affiliate memoranda, notes, records, reports, manuals, drawings, designs, computer files in any media and other documents (and all copies thereof) relating to the Company’s or any affiliate’s business and all property of the Company or any affiliate associated therewith, which he may then possess or have under his control.

Section 12. Remedy

(a) Should the Employee engage in or perform, either directly or indirectly, any of the acts prohibited by Sections 10 or 11 hereof, it is agreed that any and all severance payments and related benefits hereunder shall immediately terminate and the Company will also be entitled to full injunctive relief, to be issued by any competent court of equity, enjoining and restraining the Employee and each and every other person, firm, organization, association, or corporation concerned therein, from the continuance of such violative acts. The foregoing remedies available to the Company will not be deemed to limit or prevent the exercise by the Company of any or all further rights and remedies which may be available to the Company hereunder or at law or in equity.

(b) The Employee acknowledges and agrees that the covenants contained in this Agreement are fair and reasonable in light of the consideration paid hereunder, and the invalidity or unenforceability of any particular provision, or part of any provision, of this Agreement will not affect the other provisions or parts hereof. If any provision hereof is determined to be invalid or unenforceable and if any such provision will be so determined to be invalid or unenforceable by reason of the duration or geographical scope of the covenants contained therein, such duration or geographical scope, or both, will be reduced to a duration or geographical scope solely to the extent necessary to cure such invalidity.

Section 13. Inventions

(a) The Employee agrees that any improvements or inventions made by him, either alone or with others, during his Term of Employment by the Company, or within one (1) year thereafter, as a result of any information disclosed, invention conceived or work done during the Term of Employment, so far as the same relates to the Company's confidential information, business, products, processes and developments, and all his rights, title and interest in and to the same shall be deemed as made and held by him in a fiduciary capacity and solely for the benefit of Company, shall not be disclosed to others without the written consent of the Board of Directors and are and shall be without any further action or acknowledgment by the Employee being required, the sole and exclusive property of Company.

(b) The Employee shall disclose promptly and fully in writing to Company all such improvements and inventions. The Employee, when requested so to do, shall:

execute such further agreements as the Company deems useful or necessary to more fully assign and convey to the Company his entire right, title and interest in and to said improvements and inventions;

assist the Company and its agents in preparing copyright or patent applications, United States and foreign, covering the same;

sign and deliver all applications and assignments of the same to the Company; and

generally give all information and testimony, sign all papers and do all things which may be needed or requested by the Company, to the end that the Company may obtain, extend, reissue, maintain and enforce United States and foreign copyrights and patents covering such improvements and inventions.

(c) The Company agrees to bear all expenses that are incurred in obtaining, reissuing, maintaining, and enforcing said copyrights and patents and in vesting and perfecting title thereto in the Company, and agrees to pay the Employee for any time which it may require of him after the Term of Employment, such payment to be at an hourly rate equivalent to the rate at which the Employee was paid at the time this Agreement was terminated, said calculation to be based upon a work year of 2000 hours.

Section 14. Successors and Assigns

This Agreement will be binding upon and inure to the benefit of the Employee, his heirs, executors, administrators and beneficiaries, and the Company and its successors and assigns.

Section 15. Governing Law

This Agreement will be governed by and construed and enforced in accordance with the laws of the State of Connecticut, without reference to rules relating to conflicts of law.

Section 16. Entire Agreement

This Agreement constitutes the full and complete understanding and agreement of the parties and supersedes all prior understandings and agreements as to employment of the Employee. This Agreement cannot be amended, changed, modified or terminated without the written consent of the parties hereto.

Section 17. Waiver of Breach

The waiver of either party of a breach of any term of this Agreement will not operate nor be construed as a waiver of any subsequent breach thereof.

Section 18. Notices

Any notice, report, request or other communication given under this Agreement will be written and will be effective upon delivery when delivered personally, by overnight courier or by fax. Unless otherwise notified by any of the parties, notices will be sent to the parties as follows: (i) if to the Employee, at the address set forth in the Company's records, and (ii) if to the Company, to CAS Medical Systems, Inc., 44 East Industrial Road, Branford, CT 06405, Attention: President and Chief Executive Officer.

Section 19. Severability

If any one or more of the provisions contained in this Agreement will be invalid, illegal or unenforceable in any respect under any applicable law, the validity, legality and enforceability of the remaining provisions contained herein will not in any way be affected or impaired thereby.

Section 20. Counterparts

This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original but all of which together will constitute one and the same instrument. Delivery of signatures by facsimile or electronic image shall be valid for all purposes hereunder.

[signature page follows]

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

The Company:

CAS MEDICAL SYSTEMS, INC.

By: /s/ Andrew Kersey
Name: Andrew Kersey
Title: President and Chief Executive Officer

Employee:

/s/ Paul Benni
Paul Benni

CERTIFICATION

I, Thomas M. Patton, certify that:

1. I have reviewed this quarterly report on Form 10-Q of CAS Medical Systems, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Thomas M. Patton
Thomas M. Patton
President and Chief Executive Officer

Date: August 7, 2013

CERTIFICATION

I, Jeffery A. Baird, certify that:

1. I have reviewed this quarterly report on Form 10-Q of CAS Medical Systems, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Jeffery A. Baird
Jeffery A. Baird
Chief Financial Officer

Date: August 7, 2013

Certification of Periodic Financial Report

Pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, Thomas M. Patton, the President and Chief Executive Officer, and Jeffery A. Baird, the Chief Financial Officer of CAS Medical Systems, Inc. (the "issuer"), do hereby certify that the quarterly report on Form 10-Q accompanying this certification (the "report") fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and that information contained in the report fairly presents, in all material respects, the financial condition and results of operations of the issuer.

/s/ Thomas M. Patton
Thomas M. Patton
President and Chief Executive Officer
CAS Medical Systems, Inc.

Date: August 7, 2013

/s/ Jeffery A. Baird
Jeffery A. Baird
Chief Financial Officer
CAS Medical Systems, Inc.

Date: August 7, 2013