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Research Report – Update

Investors should consider this report as only a single factor in making their investment decision.

BioSig Technologies, Inc.

Speculative Buy

Howard Halpern

September 12, 2023

BSGM $0.45 — (NASDAQ)

	2021A	2022A	***2023E***	***2024E***
Revenues (million)	$0.4	$0.3	***$0.0***	***$0.5***
Earnings (loss) per share	($0.95)	($0.64)	***($0.42)***	***$(0.24)***

52-Week range	$1.65 – $0.25	Fiscal year ends:	December
Common shares out as of 8/13/23	74.9 million	Revenue per share (TTM)	$0.00
Approximate float	62.1 million	Price/Sales (TTM)	NMF
Market capitalization	$33.7 million	Price/Sales (FY2024)E	45.0X
Tangible book value/share	$0.00	Price/Earnings (TTM)	NMF
Price/tangible book value	NMF	Price/Earnings (FY2024)E	NMF

BioSig Technologies, Inc., headquartered in Westport CT, provides advanced digital signal processing technology that brings never-before-seen insights to the treatment of cardiovascular arrhythmias through its FDA–cleared product PURE EP™, which provides real-time signal visualization allowing physicians to perform insight-based, highly targeted cardiac ablation procedures with increased procedural efficiency and efficacy.

Key investment considerations:

Maintaining our Speculative Buy rating but reducing our twelve-month price target to $0.90 from $2.00 per share due primarily to reductions in our sales per share forecast and sector multiples.

BSGM's PURE EP System is a signal processing platform that enables electrophysiologists to see more cardiac signals and analyze them in real-time. The device aims to minimize noise from cardiac recordings thereby improving the fidelity of acquired cardiac signals. The PURE EP™ System has been used in over 3,000 procedures by more than 80 physicians at 21 hospitals across the US.

In August 2023, BSGM launched a subscription model for its PURE EP™ offering. Cleveland Clinic, the #1 heart center in the Nation, signed on as the company's first subscriber to receive latest software advancements in intra-cardiac signal visualization. The key to growth is establishing a recurring revenue stream where BioSig owns the device and the medical center pays a quarterly fee. This move should result in quicker deployments as the funds necessary to pay for the device will come from operating budgets not capital budgets.

In May 2023, the Cleveland Clinic published findings indicating the PURE EP platform provided real-time tissue-specific feedback that achieved equal lesion quality and dimension in a third of the time as conventional methods. The time saving should enable medical centers to generate a positive ROI within months of a deployment.

In 2Q23, BSGM reported (on 8/14/23) no revenue compared to $8,000 last year. The loss per share was ($0.16) versus ($0.13) in 2Q22. We projected 2Q23 revenue of $5,000 and a loss of ($0.08) per share.

For 2023 and 2024, we project total revenue of $30,000 and $250,000, respectively in each period. Revenue growth next year is predicated on new customers adopting the company's subscription based model.

Our price target is reflects a present value calculation of potential revenues generated by the company in 2024. With only modest penetration into the estimate 5,000 US catheterization labs revenue could reach $13.8 million (prior was $22 million) by 2028. Our reduced forecast reflects slower than anticipated customer adoption.

****Please view our disclosures on pages 14 - 16.***

Recommendation and Valuation

Maintaining our Speculative Buy rating but reducing our twelve-month price target to $0.90 from $2.00 per share due primarily to reductions in our sales per share forecast and sector multiples.

The PURE EP™ System has been used in over 3,000 procedures by more than 80 physicians at 21 hospitals across the US.

In August 2023, BSGM announced it officially launched a subscription model for its PURE EP™ offering so that electrophysiologists and cardiology departments can access the latest features (that provide expanded reimbursement options) with the ability to customize the suite of software capabilities to suit their needs. The key to growth is establishing a recurring quarterly revenue stream where BioSig owns the device and the medical center pays fee. This move should result in quicker deployments as the funds necessary to pay for the device will come from operating budgets not capital budgets. The announcement included an important development that the Cleveland Clinic, the #1 heart center in the Nation, signed on as the company's first subscriber to receive the latest software advancements in intra-cardiac signal visualization.

We anticipate the August 2023 announcement should begin to build awareness of the company's platform alogn with published research findings such as in May 2023 by the Cleveland Clinic where they found the PURE EP platform provided real-time tissue-specific feedback that achieved equal lesion quality and dimension in a third of the time as conventional methods. That time saving should enable medical centers to generate a positive ROI within months of a deployment of the company's system.

Our 12-month price target of $0.90 per share implies shares could double over the next twelve months. Our price target anticipates the company generating revenue per share of approximately $0.12 per share (prior was $0.23 per share) in 2028 based on having at least 125 deployments of the PURE EP system providing quarterly recurring revenue. Our year-ahead revenue per share estimate of $0.09 (prior was $0.17) reflects a present value calculation of our 2028 forecast. According to finviz.com average price-to-sales multiple for companies with similar market capitalizations in the medical device sector is 11.5X (prior was 13.2X). We applied a price-to-sales multiple of 11.5X to our 2024 present value revenue per share estimate of $0.09, discounted from execution risk, to obtain a year-ahead price target of approximately $0.90 per share.

Our price target is reflects a present value calculation of potential revenues begin generated by the company in 2024. With only modest penetration into the estimate 5,000 US catheterization labs (according to a January 2023 report published by MarkWide Research) revenue could reach $13.8 million (prior was $22 million) by 2028. Our reduced forecast reflects slower than anticipated customer adoption.

We believe BioSig Technologies, Inc. is most suitable for highly risk tolerant investors that seek exposure to an emerging growth company providing its PURE EP System within the electrophysiology market.

Business Overview

BioSig Technologies, Inc., headquartered in Westport CT, provides advanced digital signal processing technology that brings never-before-seen insights to the treatment of cardiovascular arrhythmias through its FDA–cleared product the PURE EP™ System. This system provides real-time signal visualization allowing physicians to perform insight-based, highly targeted cardiac ablation procedures with increased procedural efficiency and efficacy. The system helps electrophysiologists treat patients suffering from complex arrhythmias with a procedure called cardiac catheter ablation, a procedure that involves delivery of energy through the tip of a catheter that scars or destroys heart tissue to correct (arrhythmias). BioSig received 510(k) clearance from the US Food and Drug Administration in August 2018 to market its PURE (Precise Uninterrupted Real-time evaluation of Electrograms) EP System.

PURE EP helps to improving the fidelity of acquired cardiac signals, which should improve the accuracy and efficiency of the EP studies and ablation procedures. The device, essentially a digital signal processing system,

has been shown in clinical data to give an electrophysiologist a 75% overall improvement in intracardiac signal quality and confidence in interpreting PURE EP signals over conventional sources.

PURE EP's initial focus is on improving intracardiac (inside the heart) signal acquisition and enhancing diagnostic information for cardiac catheter ablation procedures for complex arrhythmias like ventricular tachycardia, a potentially life-threatening arrhythmia, and atrial fibrillation, the most common cardiac arrhythmia associated with a fivefold risk of stroke.

Recent Developments

During August 2023, BSGM announced the release of new software features for the PURE EP technology platform to include near-field tracking which automatically monitors changes in the local unipolar electrogram to provide real-time tissue feedback and characterization and automatic tachycardia characterization to alert electrophysiologists in real-time to subtle changes in tachycardia conduction patterns. Also, the company announced it officially launched a subscription model for its PURE EP offering so that electrophysiologists and cardiology departments can access the latest features (that provide expanded reimbursement options) with the ability to customize the suite of software capabilities to suit their needs. This move should result in quicker deployments as the funds necessary to pay for the device will come from operating budgets not capital budgets. The announcement included an important development that the Cleveland Clinic, the #1 heart center in the Nation, signed on as the company's first subscriber to receive the latest software advancements in intra-cardiac signal visualization.

During July 2023, BioSig announced seed funding of $2.2 million for its BioSig AI Sciences, Inc. subsidiary. BAIS intends to join BioSig's world class technology team with external partners and collaborators to advance the research and development of an artificial intelligence medical device platform. Also, the company announced was selected to join NVIDIA Inception, a program designed to partner with companies revolutionizing industries with advancements in artificial intelligence and data sciences.

In June 2023, the company announced it is advancing the research and development of an artificial intelligence medical device platform in collaboration with technical advisory partner Reified Labs. The platform's foundational machine learning model is anticipated to be based on integrated healthcare datasets, beginning with data acquired by BioSig's first product, the PURE EP™ platform. Solutions developed under the terms of the collaboration may be integrated into the PURE EP platform for potential commercial application.

PURE EP System

The patented PURE EP System is designed to address long-standing limitations that slow and disrupt cardiac catheter ablation procedures, such as environmental lab noise, signal saturation, and slow signal recovery. PURE EP is a signal processing platform (pictured below – from April 2023 presentation) that combines advanced hardware and software to address known challenges associated to signal acquisition, to enable electrophysiologists to see more signals and analyze them in real-time. The device aims to minimize noise from cardiac recordings and acquire high-fidelity cardiac signals. Improving fidelity of acquired cardiac signals may potentially increase the diagnostic value of these signals, thereby possibly improving accuracy and efficiency of the electrophysiological (EP) studies and ablation procedures.

Advantages of the system has include noise reduction via its proprietary architecture as it was engineered to enable acquisition of high-fidelity signals in an original, unfiltered format. The system provides a wide dynamic range that retains cardiac signal details and reduces saturation. Customer should experience higher fidelity,

which means the system provides a large frequency bandwidth and linear signal acquisition that helps to accurately display complex fractionated signals, even at lower amplitudes and higher frequencies. The system also provides its end users with clear, stable unipolar signals, and a seamless integration process with existing EP labs and workflows and is compatible and complementary with EP recording systems, mapping systems, robotic equipment, and multi-display panels.

The system's software is customizable by providing modules and specialty digital filters to enable electrophysiologists to customize their interface and optimize signals. Released in 4Q22, the company released software Version 6 with its ACCUVIZ™ Module. This is the most advanced iteration of the company's digital signal processing technology, as it delivers a new level of efficiency enabling unlimited, real-time analysis of intra-cardiac signals. Additionally, it introduces advanced signal processing automation, elevated visualization of clear cardiac signal information, and even smarter workflows.

BioSig has a manufacturing and professional services agreement with Plexus Corp. where Plexus will manufacture the PURE EP System and develop a new product pipeline for the company's subsidiary, ViralClear.

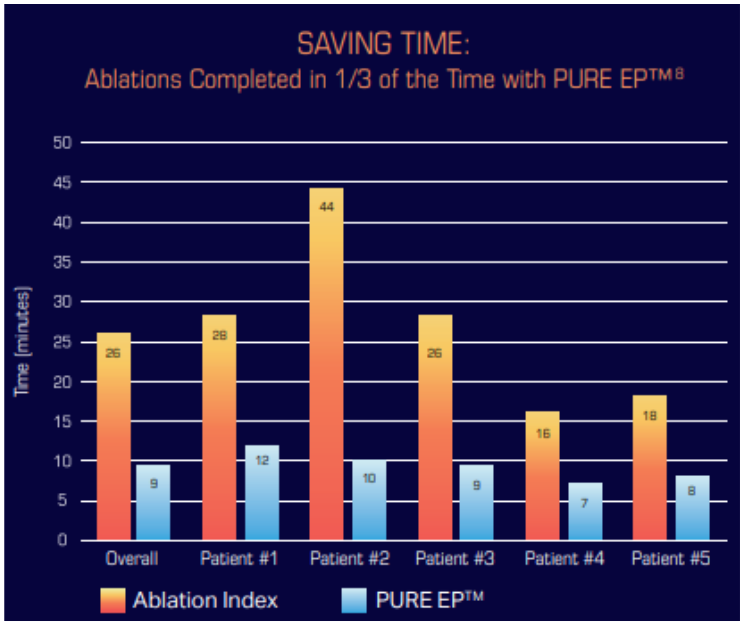
The company has 56 worldwide fundamental granted/allowed patents in the field of digital signal processing.

Published Clinical Data

In May 2023, researchers from Cleveland Clinic presented data from three abstracts at Heart Rhythm 2023 that evaluated an optimized radiofrequency ablation technique for pulmonary vein isolation, which is a type of ablation procedure used to treat atrial fibrillation, as it compares to the existing standard, the Ablation Index™. Researchers used BSGM's proprietary PURE EP™ platform for real-time tissue-specific feedback to achieve equal lesion quality and dimension in a third of the time as conventional methods that rely on surrogate metrics. The data from three abstracts highlight the potential of an optimized radiofrequency ablation technique for pulmonary vein isolation and preservation of raw unipolar signal using the PURE EP platform guidance enabled real-time tissue-specific feedback when conducting ablation.

Dr. Wazni (section head, cardiac electrophysiology and pacing at Cleveland Clinic and lead researcher) stated that despite past evidence suggesting validation and efficacy, unipolar signals have not been used to help guide lesion and ablation because of their susceptibility to interference from an inherently noisy lab environment. He went on to conclude that these studies presented to Heart Rhythm 2023, suggest that the preservation of raw cardiac signal enables the use of unipolar signals to help guide ablations, while improving lesion precision and reducing procedure time.

The first abstract, entitled "Unipolar Signal Modification-Guided Radiofrequency Ablation," found radiofrequency ablation guided by unipolar signal modification achieved identical transmural lesion dimensions for atrial tissue thickness less than three millimeters, with ablation time being significantly shorter (8 seconds) than ablation index-guided procedures (24 seconds). That is a significant time saving that should result in costs saving for a medical center using the PURE EP platform. The chart on the right from a company presentation shows the results and time savings from patients in the study that resulted from the company's technology being able to distinguish between healthy and scarred tissue during lesion placement, as well as ability to create successful blocks of abnormal heart rhythms.



The second abstract, entitled "Feasibility of Unipolar Signal Guided Ablation in Creating Contiguous Lines of Conduction Block: A Proof-of-Concept Study," demonstrated that unipolar electrograms accurately placed and spaced transmural lesions to prevent gaps, creating a successful bidirectional block. In this study, physicians were blinded to the 3D mapping system traditionally used to measure lesion location and spacing and relied entirely on unipolar morphology as seen on the PURE EPTM platform.

The third abstract, entitled "Comparison of Unipolar Electrogram Monitoring during Radiofrequency Ablation in Viable and Ablated Myocardium: Loss of the S-component" showed that unipolar electrogram monitoring can differentiate between healthy and scarred tissue in both singular isolated lesions and contiguous lesions that constitute an ablation line. This information is critical to inform lesion placement in a clinical setting where the lesion diameter can vary based on the catheter orientation.

Growth Strategy

The company growth strategy is centered on commercializing its PURE EP system (see chart below). The strategy includes BioSig's presence (in-person and virtually) at leading industry events and scientific sessions, both nationally and internationally, for the purposes of physician education, demonstrations, and select presentations of advanced R&D product pipeline.

BSGM is pivoting on how it markets and will generate future revenue from its PURE EP System. While still entering into 60-day evaluation agreements with medical centers, the key to growth will be to establish a subscription-based recurring quarterly revenue stream where BioSig owns the device (so it can be redeployed if returned) and the medical center pays a quarterly fee. The move to subscription sales should mean quicker deployments as the funds necessary to pay for the device will come from a medical centers' operating budget not its capital budgets.

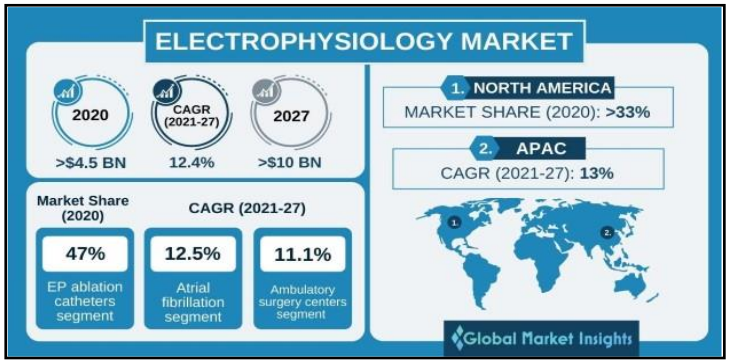
The sales process will include the May 2023 findings published by the Cleveland Clinic where they found that the PURE EP platform provided real-time tissue-specific feedback that achieved equal lesion quality and dimension in a third of the time as conventional methods. That time saving should enable medical centers to generate a positive ROI within months of a deployment of the company's system.

The PURE EP™ System has been used in over 3,000 procedures by more than 80 physicians at 21 hospitals across the US.

Entering 2023, the company has ongoing collaborations with US medical centers such as the Mayo Clinic, Texas Cardiac Arrhythmia Institute, Cleveland Clinic, and Kansas City Heart Rhythm Institute. Having those medical centers and new published data presented at Heart Rhythm 2023 conference in May 2023 should aid in obtaining new medical centers signing up for 60-day evaluation agreements for BioSig PURE EP system and quickly transitioning to a quarterly recurring revenue subscription.

Electrophysiology (EP) Market

Electrophysiology is a branch of physiology (science that treats the functions of living organisms and their parts, and of the physical and chemical factors and processes involved) that studies the relationship between electric phenomena and bodily processes. The electrophysiology market was $6.8 billion in 2021 and is anticipated to grow 9.4% annually reaching $11.6 billion in 2027 between 2021 and 2027



(Source: MarketsandMarkets Research – December 2022). A growing number of cases of cardiac arrhythmia globally owing to the adoption of unhealthy lifestyles will help drive the market growth. Acceptance of technological advanced products to enhance treatment will thereby accelerate the demand for electrophysiology products in the coming years.

The chart above from Global Market Insights indicates the atrial fibrillation segment to grow 12.5% annually through 2027 as acceptance of ablation procedures increases for the treatment of atrial fibrillation. According to the CDC, around 12.1 million people are slated to be diagnosed with atrial fibrillation in the US by 2030.

The hospital segment of the EP market is poised to expand at more than a 12.3% CAGR till 2027 with the increased spending capacity of hospitals on innovative EP products along with the presence of skilled expertise helping to drive this segment's growth. In addition, an increasing number of patient visits to hospitals well-equipped with electrophysiology departments should help to drive growth.

The North American electrophysiology market accounted for 51.2% of total market share in 2021 followed by 24.8% market share for Europe. According to the report published by American Heart Association Research, in 2017, approximately 92.1 million American adults suffered from some form of cardiovascular disorder or the post-effects of stroke. Also, the increasing number of ablation centers and procedures, coupled with the growing use of electrophysiology devices, should help drive growth in North America.

Projections

2023 Forecast - We project total revenue of $30,000 (prior was $135,000), and a net loss of $29.8 million or ($0.42) per share on 71.4 million average common shares outstanding. We previously projected a net loss of $24.1 million or ($0.35) per share on 68.3 million average common shares outstanding. Our revenue forecast reflects 1H23 results that only generated revenue of $5,000 and minimal adoption of the company's PURE EP System in medical centers. We are forecasting no revenue in 3Q23 with the likelihood of some modest level of customer deployments utilizing the company's recently announced recurring revenue subscription model.

Gross profit should equal revenue due primarily to revenue coming from a subscription based model. General and administration expenses are projected to increase to $24.5 million from $21.4 million in 2022 due to increased stock-based compensation expense and an inventory write-down in 2Q23. Research and development expenses are projected to decrease to $4.9 million from $5.8 million in 2022.

In 2023, we project $12.4 million cash used in operations from a cash loss of $15.5 million and a $3.1 million decrease in working capital. We project $245,000 cash used in investing primarily from capital expenditures. Cash provided by financing of $13.6 million should primarily come from proceeds from sales of common stock and cash received from sale of subsidiary stock. We project a $901,000 increase in cash to $1.3 million at the end of 2023.

2024 Forecast - We project total revenue of $525,000 (prior was $1.2 million), up from $30,000 projected for 2023 and the net loss narrowing to $22.7 million or ($0.24) per share on 96 million average common shares outstanding from $29.8 million or ($0.42) per share on 71.4 million average common shares outstanding. We previously projected a the net loss of $22.1 million or ($0.26) per share on 85 million average common shares

Revenue should be driven by the increasing adoption of the PURE EP platform by catheterization labs within medical centers utilizing a quarterly recurring revenue payment model. As customer growth occurs on a recurring revenue based model, we anticipate the company experiencing sequential quarterly revenue growth in 2024, albeit at a slower pace than previously anticipated.

Gross profit should equal revenue due to the recurring revenue model. General and administration expenses are projected to decrease to $18.7 million from $24.5 million in 2023 as the company should be setup to leverage its operations to support sales growth using a reduced level of stock-based compensation. Research and development expenses are projected at $4.3 million compared to an estimated $4.9 million in 2023.

In 2024, we project $9.6 million cash used in operations from a cash loss of $12.2 million and a $2.6 million decrease in working capital. We project $200,000 cash used in investing primarily from capital expenditures. Cash provided by financing of $9.5 million should primarily come from proceeds from sales of common stock. We project a $335,000 decrease in cash to $923,000 in 2024.

2028 Revenue Potential

We anticipate the company building a growing recurring revenue customer base for its PURE EP platform offering. With only modest penetration into the estimate 5,000 US catheterization labs revenue could reach $13.8 million (prior forecast was $22 million) by 2028. We anticipate a recurring revenue customer base that could average 125 (prior estimate was 200) in 2028. Our reduced outlook reflects the company getting off to a slower than anticipated start to generating a sustained recurring revenue customer base in 2H23 and 2024.

2Q23 and 1H23 Results

2Q23

BSGM had no revenue compared to $8,000 in 1Q22. The only revenue recorded was service revenue last year. The net loss increased to $11.1 million or ($016) per share on average shares outstanding of 70.2 million compared to a loss of $5.9 million or ($0.13) per share on average shares outstanding of 44.8 million in the year-ago-period. We projected a net loss of $5.6 million or ($0.08) per share on total revenue of $5,000.

The loss from operations increased to $10.9 million from $5.7 million last year. General and administrative expenses increased to $9.1 million from $4.3 million in 2Q22 period due primarily to inventory write-down and higher employee and service provider stock-based compensation, as well as fees paid to service providers. Research and development expenses increased to $1.7 million from $1.4 million last year due primarily to a higher salaries and consulting fees in order to implement technology advancements. D&A expense increased to $92,000 from $74,000 due to adding additional manufacturing, office computers, and other equipment.

In 2Q23, interest income was $3,000 and other expense was $225,000 compared zero in the year-ago-period.

The company recorded preferred stock dividends and deemed dividends of $3,000 and $111,000 in the year-ago period. The year-ago period reflects dividends accrued on the company's Series C Preferred Stock issued in prior years stemming from stock conversion rate reset from $2.27 to $0.75 in 2022 that was recorded as a noncash deemed preferred stock dividend of $108,000.

2H23

In 1H23, total revenue decreased to $5,000 from $16,000 in the year-ago period. The only revenue recorded in each period was service revenue. The net loss was $18.4 million or ($028) per share on average shares outstanding of 65.9 million compared to a loss of $13.8 million or ($0.36) per share on average shares outstanding of 37.9 million in the year-ago-period.

Gross margin in each period was 100%.

The loss from operations was $18.3 million compared to $13.7 million last year. General and administrative expenses increased to $15.4 million from $10.7 million in 1H22 period. D&A expense increased to $176,000 from $126,000 last year. Research and development expenses decreased to $2.8 million from $3 million in the year-ago period.

	Income Statements (in thousands $)	
	6M23A	6M22
Product sales	-	-
Service	5	16
Total revenue	5	16
Cost of goods sold	-	-
Gross profit	5	16
Research and development	2,771	2,968
General and administration	15,352	10,703
Depreciation and amortization	176	126
Operating income (loss)	(18,294)	(13,781)
Interest income - debt settlement - other	(218)	-
Income (loss) before income taxes	(18,512)	(13,781)
Income taxes (benefit)	-	-
Net income / (loss)	(18,512)	(13,781)
Non-controlling interest	87	59
Preferred stock dividend / deemed dividend	(5)	(113)
Net income (loss) to common	(18,430)	(13,835)
EPS	(0.28)	(0.36)
Shares Outstanding	65,878	37,921

In 1H23, interest income and other was $218,000 compared zero in the year-ago-period.

The company recorded preferred stock/deemed dividends of $5,000 compared to $113,000 last year. Non-controlling interest was a positive $87,000 compared to $59,000 in 1H22.

In 1H23, the company used $10.5 million cash from operations from a cash loss of $10 million and a $549,000 increase in working capital. BSGM used $122,000 cash in investing activities consisting solely of capital expenditures. Cash provided by financing activities of $11.6 million consisted of proceeds from the sale of common stock and sale of subsidiary stock. Cash increased by $895,000 to $1.3 million as of June 30, 2023.

Liquidity – As of June 30, 2023, BioSig had $1.3 million in cash, no debt, and shareholder's equity of $331,000.

As of June 30, 2023 the company had 105 shares of Series C Preferred stock issued and outstanding. The conversion price of the Series C Preferred stock is $0.25 per share.

Between January 2023 and May 2023, BioSig entered into multiple securities purchase agreements with certain institutional and accredited investors to which they sold approximately 11.1 million shares of common stock and issued nearly 5.5 million warrants. Net processed were nearly $10 million after deducting expenses of approximately $481,000.

Pursuant to certain engagement agreements, dated October 11, 2022 and February 24, 2023 the company had entered into with Laidlaw & Company, BGSM issued to Laidlaw in connection with the 2023 PIPEs, warrants to purchase an aggregate of 471,000 shares of common stock at an average exercise price of nearly $0.87 per share. The Laidlaw warrants become exercisable six months after the date of issuance and expire in five and one-half years.

On June 30, 2023, BioSig AI sold over 1.7 million shares of its common stock for net proceeds of nearly $1.6 million (at $1.00 per share). Prior to the sale, BioSig AI was a wholly owned subsidiary. At June 30, 2023, BioSig had a majority interest in BioSig AI of 87.5%. Pursuant to an engagement agreement, BioSig AI entered into with Laidlaw, BioSig AI issued to Laidlaw to purchase an aggregate of 90,000 shares of its common stock at an exercise price of $1.00 per share. The Laidlaw warrants become exercisable immediately and will expire five years following the date of issuance.

Competition

BioSig is currently marketing its PURE EP system as an additional information system for the electrophysiology (EP) lab. In general, the EP market is characterized by intense competition. According to a report from DRG Medtech 360 Millennium there are four large companies that share the majority of the EP recording market in the US and produce the following electrophysiology recording systems with an average selling price of approximately $160,000:

- GE Healthcare's family of CardioLab Recording Systems were initially developed in the early 1990s by Prucka Engineering, which was acquired by General Electric Company in 1999.

- The LabSystem PRO EP Recording System was originally designed in the late 1980s by C.R. Bard. C.R. Bard's electrophysiology business was acquired by Boston Scientific Corporation in 2013.

- HeNan HuaNan Medical Science and Technology Co., LTD. offers the GY-6000 multi-channel physiological recorder (not FDA approved).

- St. Jude Medical, Inc.'s EP-WorkMate Recording System was acquired from EP MedSystems, Inc. in 2008, which had received clearance for the product from the FDA in 2003. In January 2017, Abbott Laboratories acquired St Jude Medical, Inc.

CathVision is developing an EP recording system, ECGenius System™ which is not yet cleared for sale in the US and not authorized for sale in Europe.

Risks

In our view, these are the principal risks underlying the stock.

Going concern issues – As of June 30, 2023, the company had cash of $1.3 million and working capital deficit of $1.3 million. In 2022, BSGM used cash in operating activities of $21.7 million. These conditions raise substantial doubt about the company's ability to continue as a going concern.
Operating losses expected to continue – BSGM is an early commercialization stage company that is expected to incur substantial additional operating expenses over the next several years. The company's products have generated minimal commercial revenue through 1H23. While we anticipate revenue to increase in 2024 from recurring subscription sales of the PURE EP System, it is unlikely to be enough to fund operating expenses.

Product development and commercialization uncertainty - Although the PURE EP System, received FDA 510(k) clearance from the FDA, the company is currently conducting clinical trials and may conduct additional clinical trials, which may require substantial further capital expenditure, to establish the safety and efficacy data needed to obtain acceptance by the medical community and coverage by third-party payors. There can be no assurance that the company's current or future product candidates will be successfully developed or commercialized.

Regulatory risks - Medical devices are subject to extensive and rigorous regulation by the FDA pursuant to the Federal Food, Drug, and Cosmetic Act, by comparable agencies in foreign countries, and by other regulatory agencies and governing bodies. The FDA may require additional testing and surveillance programs to monitor the effects of approved products that have been commercialized and can prevent or limit further marketing of a product based on the results of these post-market evaluation programs.

The process of obtaining marketing clearance or approval from the FDA for new products could take a significant period of time, require the expenditure of substantial resources, involve rigorous pre-clinical and clinical testing, require changes to the products and result in limitations on the indicated uses of the product.

The company received 510(k) clearance to market its current lead product, the PURE EP System in the US. If the company intends to market the PURE EP System for additional medical uses or indications, it may need to submit additional 510(k) applications to the FDA that are supported by satisfactory clinical trial results specifically for the additional indication. The failure to obtain FDA marketing clearance for any additional indications for the PURE EP System or any other future product would have a material adverse effect on the company's business.

Competition - The EP market is highly competitive. There are a number of groups and organizations, such as healthcare, medical device and software companies in the EP market that may develop a competitive offering.

Reimbursement concerns – Widespread adoption of the PURE EP System, and any other products the company may develop in the future by the medical community, is unlikely to occur without a financial incentive from third-party payors for the use of these products. Third-party payors include but are not limited to governmental programs such as Medicare and Medicaid, commercial health insurers and private payors, workers' compensation programs, and other organizations. PURE EP System does not receive separate reimbursement from any third-party payor. Instead, healthcare providers typically receive reimbursement for the procedure in which the company's product is used. If healthcare providers are unable to obtain sufficient reimbursement from healthcare payers product sales could be materially adversely affected.

Dependence on collaboration – BSGM depends on its collaboration with the Mayo Clinic and Cleveland Clinic for the research and development of additional advanced features of PURE EP platform. If the collaborations are not successful, the company may not be able to realize the market potential of such features and may not have the rights to use any such developed advanced features.

Potential dilution – BSGM's stockholders may experience substantial dilution as a result of the exercise of outstanding options or warrants to purchase shares of the company's common stock, or upon conversion of the

Series C preferred stock or warrants into shares of BSGM common stock. Additional dilution may also come from the company's sale of common stock through security purchase agreements.

Material weakness in internal controls – At December 31, 2022, BSGM has identified a material weakness in its internal control over inadequate identification, recording and reporting of stock based compensation due under consulting or other third-party contracts but not yet ratified by the company's Board of Directors. As of June 30, 2023, the company added additional measures including multiple reviews of contract language with all future contracts to ensure that any stock-based compensation is subject BioSig's board of directors approval. The company anticipates the added contract revision reviews will remediate the underlying deficiencies as identified. The remediation efforts will include an ongoing review of the implementation of additional controls to ensure all risks have been addressed. The material weaknesses will not be considered remediated until the applicable controls operate for a sufficient period of time and management has concluded, through testing, that these controls are operating effectively.

Liquidity risk - Shares of BSGM have risks common to those of the microcap segment of the market. Often these risks cause microcap stocks to trade at discounts to their peers. The most common of these risks is liquidity risk, which is typically caused by small trading floats and very low trading volume and can lead to large spreads and high volatility in stock price. There are 62.1 million shares in the float and the average daily volume is approximately 775,000 shares.

Miscellaneous risk - The company's financial results and equity values are subject to other risks and uncertainties including competition, operations, financial markets, regulatory risk, and/or other events. These risks may cause actual results to differ from expected results.

Consolidated Balance Sheets
(in thousands $)

	2021A	2022A	2Q23A	**2023E**	**2024E**
Cash	11,659	357	1,252	**1,258**	**923**
Accounts receivable	-	9	21	**20**	**25**
Employee advance	-	-	5	**5**	**5**
Inventory	1,881	336	189	**150**	**100**
Net investment in leases, short-term	-	101	102	**102**	**102**
Prepaid expenses and vendor deposits	354	325	418	**350**	**325**
Total current assets	13,894	1,128	1,987	**1,885**	**1,480**
Property and equipment	652	665	621	**620**	**615**
Right-to-use assets	604	705	561	**561**	**561**
Other	369	1,612	881	**881**	**881**
Total assets	15,519	4,110	4,050	**3,947**	**3,537**
Accounts payable and accrued expenses	2,179	2,852	2,906	**5,500**	**8,000**
Customer deposits	-	-	-	**-**	**-**
Deferred revenue	32	5	-	**-**	**-**
Dividends payable	82	91	96	**96**	**96**
Lease liability	283	313	330	**330**	**330**
Total current liabilities	2,576	3,261	3,332	**5,926**	**8,426**
Deferred revenue	5	-	-	**-**	**-**
Lease liability	373	452	282	**282**	**282**
Total liabilities	2,954	3,713	3,614	**6,208**	**8,708**
Series C convertible preferred stock	105	105	105	**105**	**105**
Non-controlling interest	219	(21)	89	**89**	**89**
Total stockholders' equity	12,460	292	242	**(2,366)**	**(5,276)**
Total liabilities & stockholders' equity	15,519	4,110	4,050	**3,947**	**3,537**

Source: Company filings and Taglich Brothers' estimates

Income Statements for the Fiscal Years Ended
(in thousands $)

	FY21A	FY22A	**FY23E**	**FY24E**
Product sales	414	254	**-**	**-**
Service	27	32	**30**	**525**
Total revenue	441	286	**30**	**525**
Cost of goods sold	199	57	**-**	**-**
Gross profit	242	229	**30**	**525**
Research and development	5,602	5,821	**4,906**	**4,330**
General and administration	27,853	21,380	**24,502**	**18,650**
Depreciation and amortization	198	293	**339**	**314**
Operating income (loss)	(33,411)	(27,265)	**(29,717)**	**(22,769)**
Interest income	2	3	**7**	**-**
Gain on settlement of debt	553	-	**-**	**-**
Other income (expense)	-	-	**(225)**	**-**
Income (loss) before income taxes	(32,856)	(27,262)	**(29,935)**	**(22,769)**
Income taxes (benefit)	-	-	**-**	**-**
Net income / (loss)	(32,856)	(27,262)	**(29,935)**	**(22,769)**
Non-controlling interest	939	210	**157**	**120**
Preferred stock dividend / deemed dividend	(9)	(219)	**(11)**	**(12)**
Net income (loss) to common	(31,926)	(27,271)	**(29,789)**	**(22,661)**
EPS	(0.95)	(0.64)	**(0.42)**	**(0.24)**
Shares Outstanding	33,512	42,633	**71,427**	**96,000**
Margin Analysis				
Gross margin	54.9%	80.1%	**100.0%**	**100.0%**
Operating margin	NMF	NMF	NMF	NMF
Year / Year Growth				
Total Revenues	NMF	(35.1)%	**(89.5)%**	**1650.0%**

Quarterly Income Statements 2022A - 2024E
(in thousands $)

	3/22A	6/22A	9/22A	12/22A	FY22A	3/23A	6/23A	9/23E	12/23E	**FY23E**	3/24E	6/24E	9/24E	12/24E	**FY24E**
Product sales	-	-	127	127	254	-	-	-	-	**-**	-	-	-	-	**-**
Service	8	8	8	8	32	5	-	-	25	**30**	50	75	150	250	**525**
Total revenue	8	8	135	135	286	5	-	-	25	**30**	50	75	150	250	**525**
Cost of goods sold	-	-	30	27	57	-	-	-	-	**-**	-	-	-	-	**-**
Gross profit	8	8	105	108	229	5	-	-	25	**30**	50	75	150	250	**525**
Research and development	1,617	1,351	1,733	1,120	5,821	1,062	1,709	1,065	1,070	**4,906**	1,075	1,080	1,085	1,090	**4,330**
General and administration	6,401	4,302	4,774	5,903	21,380	6,245	9,107	4,550	4,600	**24,502**	4,625	4,650	4,675	4,700	**18,650**
Depreciation and amortization	55	71	84	83	293	84	92	82	81	**339**	80	79	78	77	**314**
Operating income (loss)	(8,065)	(5,716)	(6,486)	(6,998)	(27,265)	(7,386)	(10,908)	(5,697)	(5,726)	**(29,717)**	(5,730)	(5,734)	(5,688)	(5,617)	**(22,769)**
Interest income	-	-	1	2	3	4	3	-	-	**7**	-	-	-	-	**-**
Gain on settlement of debt	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	**-**
Other income (expense)	-	-	-	-	-	-	(225)	-	-	**(225)**	-	-	-	-	**-**
Income (loss) before income taxes	(8,065)	(5,716)	(6,485)	(6,996)	(27,262)	(7,382)	(11,130)	(5,697)	(5,726)	**(29,935)**	(5,730)	(5,734)	(5,688)	(5,617)	**(22,769)**
Income taxes (benefit)	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	**-**
Net income / (loss)	(8,065)	(5,716)	(6,485)	(6,996)	(27,262)	(7,382)	(11,130)	(5,697)	(5,726)	**(29,935)**	(5,730)	(5,734)	(5,688)	(5,617)	**(22,769)**
Non-controlling interest	102	(43)	113	38	210	50	37	35	35	**157**	30	30	30	30	**120**
Preferred stock dividend / deemed dividend	(2)	(111)	(19)	(87)	(219)	(2)	(3)	(3)	(3)	**(11)**	(3)	(3)	(3)	(3)	**(12)**
Net income (loss) to common	(7,965)	(5,870)	(6,391)	(7,045)	(27,271)	(7,334)	(11,096)	(5,665)	(5,694)	**(29,789)**	(5,703)	(5,707)	(5,661)	(5,590)	**(22,661)**
EPS	(0.22)	(0.13)	(0.14)	(0.16)	(0.64)	(0.12)	(0.16)	(0.08)	(0.07)	**(0.42)**	(0.06)	(0.06)	(0.06)	(0.06)	**(0.24)**
Shares Outstanding	35,997	44,814	45,016	45,025	42,633	61,427	70,282	74,500	79,500	**71,427**	88,000	90,000	90,500	91,000	**96,000**
Margin Analysis															
Gross margin	100.0%	100.0%	77.8%	80.0%	80.1%	100.0%	NMF	NMF	100.0%	**100.0%**	100.0%	100.0%	100.0%	100.0%	**100.0%**
Operating margin	NMF	NMF	NMF	NMF	NMF	NMF	NMF	NMF	NMF	**NMF**	NMF	NMF	NMF	NMF	NMF
Year / Year Growth															
Total Revenues	NMF	NMF	25.0%	NMF	(35.1)%	NMF	NMF	NMF	(81.5)%	**(89.5)%**	NMF	NMF	NMF	900.0%	**1650.0%**

Source: Company filings and Taglich Brothers' estimates

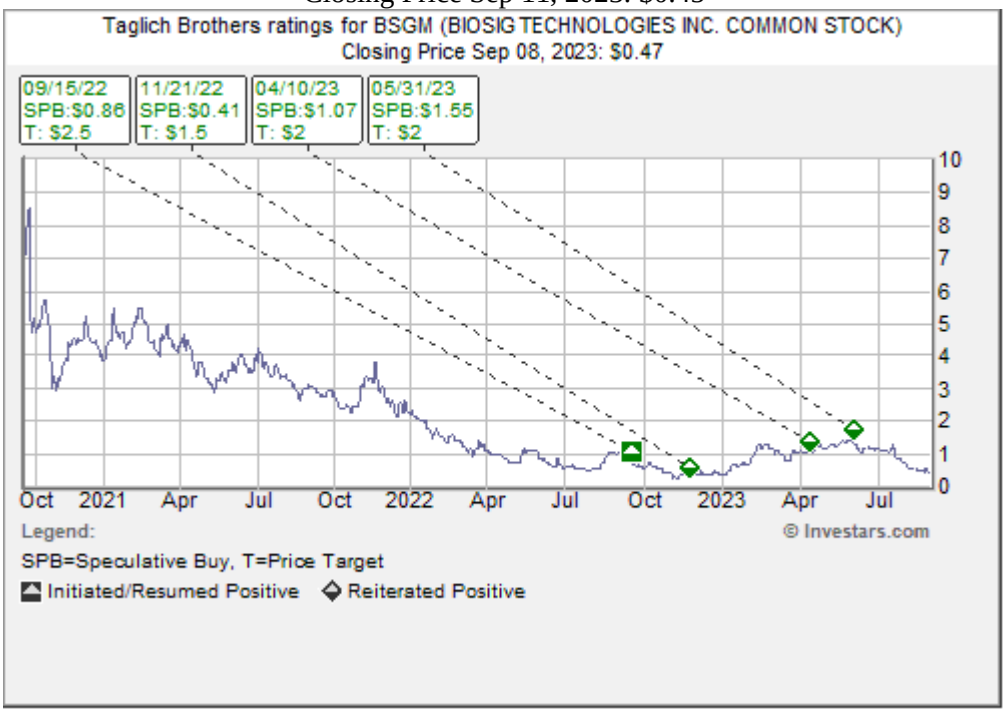
Statement of Cash Flows for the Periods Ended
(in thousands $)

	FY21A	FY22A	6M23A	**FY23E**	**FY24E**
Net income (loss)	(32,856)	(27,262)	(18,512)	**(29,935)**	**(22,769)**
Depreciation and amortization	198	293	176	**339**	**314**
Non-cash lease expense	441	373	144	**300**	**250**
Equity based compensation	9,500	4,412	6,891	**13,782**	**10,000**
Gain on settlement of debt	(553)	-	-	**-**	**-**
Change in fair value of modified options	321	15	-	**-**	**-**
Non-cash inventory writedown	-	-	1,307	**-**	**-**
Cash earnings (loss)	(22,949)	(22,169)	(9,994)	**(15,514)**	**(12,205)**
Changes in assets and liabilities					
Accounts receivable	-	(9)	(12)	**(11)**	**(5)**
Lease receibable	-	(220)	50	**-**	**-**
Employee advanceas	-	-	(5)		
Inventory	(1,114)	284	(19)	**186**	**50**
Prepaid expenses and other	(50)	30	(564)	**(25)**	**25**
Deferred revenue	38	(32)	(5)	**(5)**	**-**
Deposits	60	-	-	**-**	**-**
Accounts payable and accrued expenses	(1,988)	776	159	**3,108**	**2,500**
Operating lease liabilites	(396)	(365)	(153)	**(153)**	**-**
(Increase) decrease in working capital	(3,450)	464	(549)	**3,100**	**2,570**
Net cash provided by (used in) operations	(26,399)	(21,705)	(10,543)	**(12,414)**	**(9,635)**
Purchase of property and equipment	(542)	(168)	(122)	**(245)**	**(200)**
Net cash provided by (used in) investing	(542)	(168)	(122)	**(245)**	**(200)**
Proceeds from sale of common stock	9,004	8,283	9,993	**11,993**	**9,500**
Proceeds from sale of subsidiary stock	-	-	1,567	**1,567**	**-**
Proceeds from sale of common stock (at-the-market)	1,300	2,070	-	**-**	**-**
Proceeds from exercise of options	28	218	-	**-**	**-**
Net cash provided by (used in) financing	10,332	10,571	11,560	**13,560**	**9,500**
Net change in cash	(16,609)	(11,302)	895	**901**	**(335)**
Cash - beginning of period	28,268	11,659	357	**357**	**1,258**
Cash - end of period	11,659	357	1,252	**1,258**	**923**

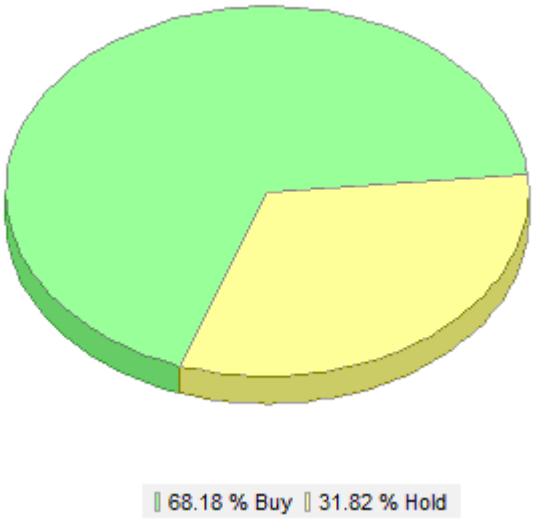
Source: Company filings and Taglich Brothers' estimates

Price Chart

Closing Price Sep 11, 2023: $0.45



Taglich Brothers' Current Ratings Distribution



Investment Banking Services for Companies Covered in the Past 12 Months

Rating	#	%
Buy	**4**	**22**
Hold		
Sell		
Not Rated		

Important Disclosures

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I, Howard Halpern, the research analyst of this report, hereby certify that the views expressed in this report accurately reflect my personal views about the subject securities and issuers; and that no part of my compensation was, is, or will be, directly, or indirectly, related to the specific recommendations or views contained in this report.

Public companies mentioned in this report:

Abbott Labs (NYSE: ABT)
Boston Scientific (NYSE: BSX)
General Electric (NYSE: GE)
Johnson & Johnson (NYSE: JNJ)
Medtronic (NYSE: MDT)

Meaning of Ratings

Buy – The growth prospects, degree of investment risk, and valuation make the stock attractive relative to the general market or comparable stocks.

Speculative Buy – Long term prospects of the company are promising but investment risk is significantly higher than it is in our BUY-rated stocks. Risk-reward considerations justify purchase mainly by high risk-tolerant accounts. In the short run, the stock may be subject to high volatility and could continue to trade at a discount to its market.

Neutral – Based on our outlook the stock is adequately valued. If investment risks are within acceptable parameters, this equity could remain a holding if already owned.

Sell – Based on our outlook the stock is significantly overvalued. A weak company or sector outlook and a high degree of investment risk make it likely that the stock will underperform relative to the general market.

Discontinued – Research coverage discontinued due to the acquisition of the company, termination of research services (includes non-payment for such services), diminished investor interest, or departure of the analyst.

Some notable Risks within the Microcap Market

Stocks in the Microcap segment of the market have many risks that are not as prevalent in Large-cap, Blue Chips or even Small-cap stocks. Often it is these risks that cause Microcap stocks to trade at discounts to their peers. The most common of these risks is liquidity risk, which is typically caused by small trading floats and very low trading volume which can lead to large spreads and high volatility in stock price. In addition, Microcaps tend to have significant company specific risks that contribute to lower valuations. Investors need to be aware of the higher probability of financial default and higher degree of financial distress inherent in the microcap segment of the market.

From time to time our analysts may choose to withhold or suspend a rating on a company. We continue to publish informational reports on such companies; however, they have no ratings or price targets. In general, we will not rate any company that has too much business or financial uncertainty for our analysts to form an investment conclusion, or that is currently in the process of being acquired.