

SECURITIES & EXCHANGE COMMISSION EDGAR FILING

ENDRA Life Sciences Inc.

Form: 10-K

Date Filed: 2020-03-26

Corporate Issuer CIK: 1681682

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

FORM 10-K

(Mark One)

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

For the Fiscal Year Ended December 31, 2019

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

For the transition period from _____ to _____

Commission file number: 001-37969

ENDRA Life Sciences Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

26-0579295

(I.R.S. Employer Identification No.)

3600 Green Court, Suite 350, Ann Arbor, MI

(Address of Principal Executive Offices)

48105-1570

(Zip Code)

(734) 335-0468

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$0.0001 per share	The Nasdaq Stock Market LLC
Warrants, each to purchase one share of Common Stock	The Nasdaq Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

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, a smaller reporting company or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
Emerging growth company	<input checked="" type="checkbox"/>		

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

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

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant, as of June 28, 2019, was approximately \$12,170,900 based on the closing sales price of the common stock on such date as reported on the Nasdaq Capital Market.

As of March 23, 2020, there were 13,483,125 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant intends to file a definitive proxy statement pursuant to Regulation 14A within 120 days after the end of the fiscal year ended December 31, 2019. Portions of such proxy statement are incorporated by reference into Part III of this Form 10-K.

ENDRA LIFE SCIENCES INC.
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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this “Annual Report”) contains “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, that are intended to be covered by the “safe harbor” created by those sections. Forward-looking statements, which are based on certain assumptions and describe our future plans, strategies and expectations, can generally be identified by the use of forward-looking terms such as “believe,” “expect,” “may,” “will,” “should,” “would,” “could,” “seek,” “intend,” “plan,” “goal,” “project,” “estimate,” “anticipate,” “strategy,” “future,” “likely” or other comparable terms and references to future periods. All statements other than statements of historical facts included in this Annual Report regarding our strategies, prospects, financial condition, operations, costs, plans and objectives are forward-looking statements. Examples of forward-looking statements include, among others, statements we make regarding: expectations for revenues, cash flows and financial performance, the anticipated results of our development efforts and the timing for receipt of required regulatory approvals and product launches.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following:

- our limited commercial experience, limited cash and history of losses;
- our ability to obtain adequate financing to fund our business operations in the future;
- our ability to achieve profitability;
- our ability to develop a commercially feasible application based on our Thermo-Acoustic Enhanced Ultrasound (“TAEUS”) technology;
- market acceptance of our technology;
- uncertainties associated with COVID-19 or coronavirus, including its possible effects on our operations;
- results of our human studies, which may be negative or inconclusive;
- our ability to find and maintain development partners;
- our reliance on third parties, collaborations, strategic alliances and licensing arrangements to complete our business strategy;
- the amount and nature of competition in our industry;
- our ability to protect our intellectual property;
- potential changes in the healthcare industry or third-party reimbursement practices;
- delays and changes in regulatory requirements, policy and guidelines including potential delays in submitting required regulatory applications for Conformité Européene (“CE”) mark certification or U.S. Food and Drug Administration (“FDA”) approval;
- our ability to obtain and maintain CE mark certification and secure required Food and Drug Administration (“FDA”) and other governmental approvals for our TAEUS applications;
- our ability to comply with regulation by various federal, state, local and foreign governmental agencies and to maintain necessary regulatory clearances or approvals;
- our dependence on our senior management team; and
- the other risks and uncertainties described in the Risk Factors and in Management’s Discussion and Analysis of Financial Condition and Results of Operations sections of this Annual Report.

Any forward-looking statement made by us in this report is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise.

PART I

As used in this Annual Report, unless the context otherwise requires, the terms “ENDRA,” “we,” “us,” “our,” and the “Company” refer to ENDRA Life Sciences Inc., a Delaware corporation.

Item 1. Business

Overview

We are leveraging experience with pre-clinical enhanced ultrasound devices to develop technology for increasing the capabilities of clinical diagnostic ultrasound in order to broaden patient access to the safe diagnosis and treatment of a number of significant medical conditions in circumstances where expensive X-ray computed tomography (“CT”) and magnetic resonance imaging (“MRI”) technology, or other diagnostic technologies such as surgical biopsy, are unavailable or impractical.

In 2010, we began marketing and selling our Nexus 128 system, which combined light-based thermoacoustics and ultrasound to address the imaging needs of researchers studying disease models in pre-clinical applications. Building on this expertise in thermoacoustics, we have developed a next-generation technology platform — Thermo Acoustic Enhanced Ultrasound, or TAEUS — which is intended to enhance the capability of clinical ultrasound technology and support the diagnosis and treatment of a number of significant medical conditions that currently require the use of expensive CT or MRI imaging or where imaging is not practical using existing technology. We ceased production of our Nexus 128 system as of January 1, 2019 and stopped providing service support and parts for all existing Nexus 128 systems as of July 1, 2019 in order to focus our resources on the development of our TAEUS technology.

Unlike the near-infrared light pulses used in our legacy Nexus 128 system, our TAEUS technology uses radio frequency (“RF”) pulses to stimulate tissues, using a small fraction (less than 1%) of the energy that would be transmitted into the body during an MRI scan. The use of RF energy allows our TAEUS technology to penetrate deep into tissue, enabling the imaging of human anatomy at depths equivalent to those of conventional ultrasound. The RF pulses are absorbed by tissue and converted into ultrasound signals, which are detected by an external ultrasound receiver and a digital acquisition system that is part of the TAEUS system. The detected ultrasound is processed into images and other forms of data using our proprietary algorithms and displayed to complement conventional gray-scale ultrasound images.

As described below, our first TAEUS platform application will focus on quantifying fat in the liver and stage progression of nonalcoholic fatty liver disease (“NAFLD”) which, untreated, can progress to Nonalcoholic Steatohepatitis, or NASH, cirrhosis and liver cancer. In April 2016, we entered into a Collaborative Research Agreement with General Electric Company, acting through its GE Healthcare business unit and the GE Global Research Center (collectively, “GE Healthcare”), under which GE Healthcare has agreed to assist us in our efforts to commercialize this application. In November 2017, we contracted with the Centre for Imaging Technology Commercialization (“CIMTEC”) to initiate human studies, through Canada-based Robarts Research Institute, with our TAEUS device targeting NAFLD. In October 2018, we received an Investigational Testing Authorization (“ITA”) from Health Canada to commence the first human studies in healthy volunteers with our TAEUS clinical system targeting NAFLD, guiding our algorithm development, and comparing our technology to MRI. The feasibility study, the first of several planned human studies, was conducted in collaboration with the widely respected Robarts Research Institute in London, Canada. We reported the completion and top-level findings of this study on September 26, 2019. The data collected from the study, including additional usability inputs, was included in our TAEUS liver device technical file submission for device CE mark, which we submitted in December 2019. We received CE mark approval for our NAFLD TAEUS application in March 2020.

Each of our TAEUS platform applications will require regulatory approvals before we are able to sell or license the application. Based on certain factors, such as the installed base of ultrasound systems, availability of other imaging technologies, such as CT and MRI, economic strength and applicable regulatory requirements, we intend to seek initial approval of our applications for sale in the European Union, followed by the United States and China.

Diagnostic Imaging Technologies

Diagnostic imaging technologies such as CT, MRI and ultrasound allow physicians to look inside a person’s body to guide treatment or gather information about medical conditions such as broken bones, cancers, signs of heart disease or internal bleeding. The type of imaging technology a physician uses depends on a patient’s symptoms and the part of the body being examined. CT technology is well suited for viewing bone injuries, diagnosing lung and chest problems, and detecting cancers. MRI technology excels at examining soft tissue in ligament and tendon injuries, spinal cord injuries, and brain tumors. CT scans can take as little as 5 minutes, while an MRI scan can take up to 30 minutes.

Unfortunately, while CT and MRI systems are versatile and create high quality images, they are also expensive and not always accessible to patients. A CT system costs approximately \$1 million and an MRI system can cost up to \$3 million. CT and MRI systems are large and can weigh several tons, typically requiring significant modifications to existing healthcare facilities to safely site the CT and MRI equipment. Because of their size and weight, CT and MRI systems are usually fixed-in-place at major medical facilities. As a result, they are less accessible to primary care and rural clinics, economically developing markets, and patient bedsides. As of 2013, there were only approximately 64,000 CT systems and 32,000 MRI systems in the world, approximately 50% of which were located in the U.S. and Japan.

While CT and MRI systems create high quality images, their use is not always practical. For example, the diagnosis and treatment of the estimated 1.4 billion patients suffering from NAFLD requires ongoing surveillance of the patients' livers to assess the progression of the disease and the efficacy of treatment. However, the use of CT and MRI systems to perform that surveillance is impractical for a number of reasons, including the high cost of the scan, the limited availability of CT and MRI systems and the required use of contrast agents, including those containing radioactive substances that can cause allergic reactions and reduced kidney functions. Patient exposure to the ionizing radiation generated by a CT system must be limited for safety reasons. Similarly, because of the strong magnetic field created by an MRI machine, patients with metal joint replacements or cardiac pacemakers cannot be imaged with an MRI system.

Because of CT and MRI's limited availability and practical limitations, a patient who would otherwise be a candidate for CT or MRI scanning must often rely on less effective or less practical methods. For example, MRI scans are not typically used to measure tissue temperature during thermoablative (temperature based) surgery. Instead, physicians use printed manufacturer guidelines to time the thermal surgery or insert surgical temperature probes in an attempt to guide treatment. As a result, the treatment is often imprecise or comes with additional risks, such as infection.

These limitations have led to a decrease in the number of CT scans. According to the American College of Radiology, the overall number of CT scans performed in the United States under Medicare Part B fell approximately 8% from 2009 to 2014. The decline in CT scans has been accompanied by increased use of alternative scanning technologies. The American College of Radiology reported that the overall number of ultrasound scans performed in the United States under Medicare Part B increased approximately 6% from 2009 to 2014. During the same period MRI usage increased by 5%, but remains significantly below the use of ultrasound technology, even in the United States.

Ultrasound Technology

An ultrasound machine transmits sound waves, which bounce off tissues, organs and blood in the body. The ultrasound machine captures these echoes and uses them to create an image. Ultrasound technology excels at imaging the structure of internal organs, muscles and bone surfaces. Due to its utility, cost-effectiveness and safety profile, ultrasound imaging is frequently used in a physician's examination room or at a patient's bedside as a first-line diagnostic tool, which has resulted in an overall increase in the number of ultrasound scans performed.

Ultrasound systems are more broadly available to patients than either CT or MRI systems. There are an estimated one million ultrasound systems globally in use today. Ultrasound systems are relatively inexpensive compared to CT and MRI systems, with smaller portable ultrasound systems costing as little as \$10,000 and new cart-based ultrasound systems costing between \$75,000 and \$200,000. Ultrasound systems are also more mobile than CT and MRI systems and many are designed to be moved by an operator from room to room, or closer to patients. Ultrasound technology does not present the same safety concerns as CT and MRI technology, since ultrasound does not emit ionizing radiation and ultrasound contrast agents are generally considered to be safe.

However, ultrasound's imaging capabilities are more limited compared to CT and MRI technology. For example, ultrasound systems cannot measure tissue temperature during thermal ablation surgery, or quantify fat to diagnose early stage liver disease -- instances where CT and MRI systems are used.

Ultrasound Market

Sales of ultrasound diagnostic equipment were approximately \$4.4 billion globally in 2017 and are expected to grow at approximately 4.4% annually. There are an estimated one million installed systems generating over 400 million annual diagnostic ultrasound procedures globally. Additionally, an estimated 30,000 to 50,000 new and replacement systems are sold into the market each year. These numbers include both portable and cart-based ultrasound systems, and cover all types of diagnostic ultrasound procedures, including systems intended for cardiology, prenatal and abdominal use. We do not currently intend to address ultrasound systems focused on applications in prenatal care, where we believe our TAEUS technology will not substantially impact patient care. Accordingly, we define our addressable market for one or more of our TAEUS applications at approximately 365,000 cart-based ultrasound systems currently in use throughout the world.

We believe that demand for ultrasound systems is driven primarily by the following factors:

- Population growth and age demographics that increase the demand for diagnostic screening for cancer, cardiology, and prenatal applications.
- Economic development broadening investment in healthcare in underserved markets such as China and Latin America, where ultrasound technology has significant appeal due to its price point and flexibility at point-of-care.
- Expanding ultrasound applications and improving image quality that drive demand for new ultrasound technologies, such as software enhancements, bi-axial probes, and dedicated single application systems.
- Positive insurance reimbursement rate trends for ultrasound diagnostics due to the technology's safety and cost-effectiveness.

Unmet Need

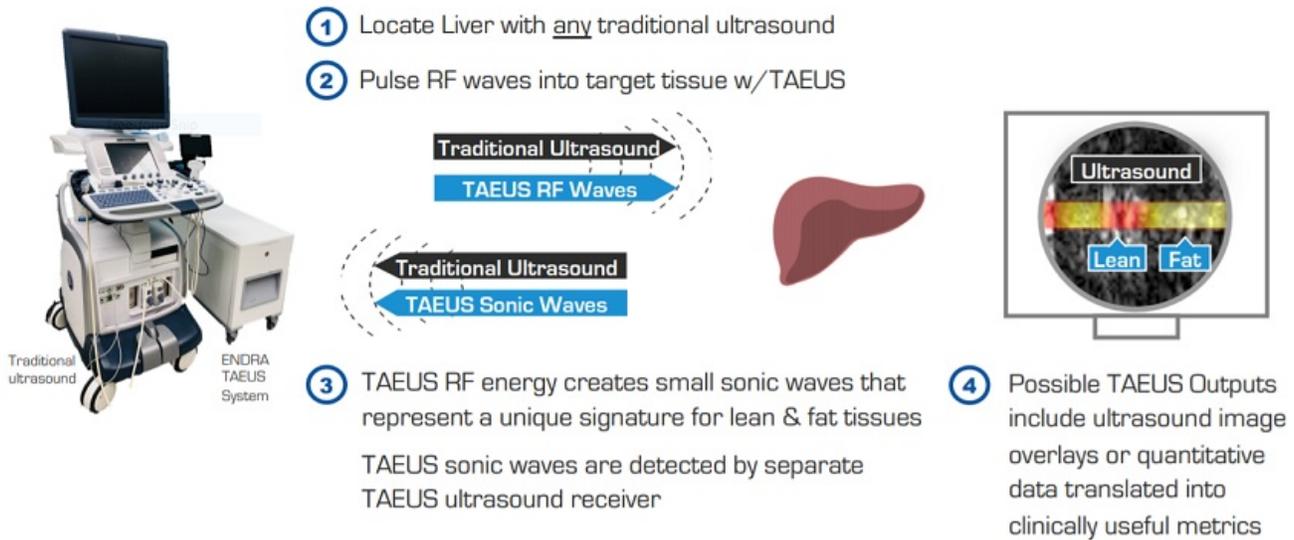
We believe that the limited availability of high-utility and cost-effective imaging technology represents a significant unmet medical need. We believe that expanding the capability of ultrasound technology to perform more of the imaging tasks presently available only on expensive CT and MRI systems will satisfy this unmet need.

Our Solutions

Our Thermo-Acoustic Enhanced Ultrasound, or TAEUS, technology uses a pulsed energy source – specifically, radio-frequency, or RF – to generate ultrasonic waves in tissue. These waves are then detected with ultrasound equipment and used to create high-contrast images and other forms of data using our proprietary algorithms. Unlike conventional ultrasound, which creates images based on the scattering properties of tissue, thermoacoustic imaging provides tissue absorption maps of the pulsed energy, similar to those generated by CT scans. Ultrasound is only utilized to transmit the absorption signal to the imaging system outside of the body.

Our TAEUS Technology Platform for Clinical Applications

To increase the utility of our thermoacoustic technology, in 2013 we began to develop our TAEUS technology platform. Unlike the near-infrared light pulses used in our earlier photoacoustic systems, our TAEUS technology uses RF pulses to stimulate tissues, using a small fraction of the energy transmitted into the body during an MRI scan. Using RF energy enables our TAEUS technology to penetrate deep into tissue, enabling the imaging of human anatomy at depths equivalent to those of conventional ultrasound. The RF pulses are absorbed by tissue and converted into ultrasound signals, which are detected by an external ultrasound receiver and a digital acquisition system that is part of the TAEUS system. Our RF-based thermoacoustics imaging is not adversely affected by blood-filled organs, enabling our TAEUS technology to be used in clinical liver applications, among others. The detected ultrasound can then be processed into ultrasound overlays or quantitative data that may be translated into clinically useful metrics using our proprietary algorithms and displayed to complement conventional gray-scale ultrasound images. The TAEUS imaging concept is illustrated below:



After required regulatory approvals, our TAEUS technology can be added as an accessory to existing ultrasound systems, helping to improve clinical decision-making on the front lines of patient care, without requiring substantially new clinical workflows or large capital investments. We are also developing TAEUS for incorporation into new ultrasound systems manufactured by companies such as GE Healthcare, described more fully below.

We believe that our TAEUS technology has the potential to add a number of new capabilities to conventional ultrasound and thereby enhance the utility of both existing and new ultrasound systems and extend the use of ultrasound technology to circumstances that either currently require the use of expensive CT or MRI imaging systems, where imaging is not practical using existing technology, or where other assessment tools such as surgical biopsy are required. To demonstrate the capabilities of our TAEUS platform, we have conducted various internal ex-vivo laboratory experiments and limited internal in-vivo large animal studies. In our ex-vivo and in-vivo testing, we have demonstrated that the TAEUS platform has the following capabilities and potential clinical applications:

- **Tissue Composition:** Our TAEUS technology enables ultrasound to distinguish fat from lean tissue. This capability would enable the use of TAEUS-enhanced ultrasound for the early identification, staging and monitoring of NAFLD, a precursor to nonalcoholic steatohepatitis ("NASH"), liver fibrosis, cirrhosis and liver cancer.
- **Temperature Monitoring:** Our TAEUS technology enables traditional ultrasound to visualize changes in tissue temperature, in real time. This capability would enable the use of TAEUS-enhanced ultrasound to guide thermoablative therapy, which uses heat or cold to remove tissue, such as in the treatment of cardiac atrial fibrillation, or removal of cancerous liver and kidney lesions, with greater accuracy.
- **Vascular Imaging:** Our TAEUS technology enables ultrasound to view blood vessels from any angle, using only a saline solution contrasting agent, unlike Doppler ultrasound, which requires precise viewing angles. This capability would enable the use of TAEUS-enhanced ultrasound to easily identify arterial plaque or malformed vessels.
- **Tissue Perfusion:** Our TAEUS technology enables ultrasound to image blood flow at the capillary level in a region, organ or tissue. This capability could be used to assist physicians in characterizing microvasculature fluid flows symptomatic of damaged tissue, such as internal bleeding from trauma, or diseased tissue, such as certain cancers.

Because of the large number of traditional ultrasound systems currently in global use, we are first developing our TAEUS technology for sale as an aftermarket accessory that works with existing ultrasound systems. Because our TAEUS technology is designed to enhance the utility of, not replace, conventional ultrasound, we believe healthcare providers will be able to increase the utilization of, and generate new revenue from, their existing ultrasound systems once we obtain required regulatory approval for specific applications. We further believe that clinicians will be attracted to our technology because it will enable them to perform more procedures with existing ultrasound equipment, thereby retaining more imaging patients in their clinics rather than referring patients out to a regional medical center for a CT or MRI scan.

ENDRA's first clinical product will be designed to interface with a conventional ultrasound scanner, utilizing the scanner's B-mode imaging to guide the selected region for assessment of liver fat content. The following sub-systems will comprise ENDRA's first generation product.

Radio Frequency (RF) Source and Computer:

The RF source consists of a low power waveform generator and an amplifier. Together, these components provide the characteristic pulses required to excite thermoacoustic signals in tissue. The computer provides processing capability to both utilize the conventional ultrasound data for navigation to the measurement site of interest, and the calculations required to convert digitized thermoacoustic signals to measurements of fat in liver tissue. The entire sub-system will reside in a single enclosure, on wheels, and sit adjacent to the ultrasound imaging system.

Specialized Transducer:

A single channel 'receive only' ultrasound transducer is specifically designed and optimized for thermoacoustic imaging. The transducer sub-system will detect thermoacoustic signals excited by the RF source within the liver. The transducer assembly includes electronics for signal amplification, digitization, and signal processing. The specialized transducer will attach to the conventional ultrasound probe used for liver imaging.

RF Applicator:

The RF applicator transmits pulses of energy, provided by the RF source, into tissue. The applicator is positioned in proximity to the target region for measurement.

A second generation product is expected to provide two dimensional imaging with a transducer composed of multiple receive elements. The RF source and applicator would be similar to those in the first generation product but the multi-element transducer would allow for multiple applications including: reading tissue composition, temperature, vascular flow, tissue perfusion, and other potential applications. Ultimately, we expect our technology will be incorporated into conventional ultrasound systems and our business model will transition from producing stand-alone systems to licensing our technology, IP and specialized components to ultrasound OEMs. Existing ultrasound equipment already includes power supplies, computation, high speed electronics, and ultrasound transducers, which may be leveraged by our thermoacoustic imaging applications. The RF source and applicator are the principal hardware components that will be added to OEM ultrasound systems for the OEM fully integrated form of our product.

We are following a model that mirrors the approach used by companies in the past to introduce new ultrasound imaging capabilities to existing conventional ultrasound scanners. Color Doppler, elastography, 3-D imaging, and high channel count systems were all introduced by new companies (not already involved in conventional ultrasound imaging). Historically, ultrasound imaging has grown through the introduction of unique technology and capabilities that expanded the applications and use of clinical ultrasound in a form that often added separate hardware to existing ultrasound systems. Ultimately, as these new technologies gained acceptance in the marketplace they were incorporated into OEM-designed and built systems that were sold by the leading ultrasound imaging vendors.

Potential Clinical Applications for our TAEUS Technology

Early Diagnosis and Monitoring of Nonalcoholic Fatty Liver Disease, or NAFLD

Our first TAEUS platform application will focus on quantifying fat in the liver and stage progression of NAFLD which, untreated, can progress to Nonalcoholic Steatohepatitis, or NASH, cirrhosis and liver cancer. In 2011, over 1.4 billion people were affected by NAFLD/NASH. The World Gastroenterology Organisation considers NAFLD/NASH a global pandemic affecting rich and poor countries alike. Obesity, hepatitis, and diabetes are leading contributors to the development of NAFLD.

Left untreated, an estimated 30% of NAFLD cases progress to NASH, a condition in which liver fat causes inflammation and decreased liver function, possibly resulting in fatigue, weight loss, muscle pain and abdominal pain. Excess liver fat remains a root cause of and key clinical concern for both of NASH and NAFLD.

Approximately 25% of NASH cases progress to liver fibrosis, in which liver inflammation causes scar tissue which eventually prevents the liver from functioning properly. The scar tissue blocks the flow of blood through the liver and slows the processing of nutrients, hormones, drugs, and naturally produced toxins. It also slows the production of proteins and other substances made by the liver. Once a patient develops cirrhosis of the liver, the only life-saving therapy is a liver transplant. Additionally, cirrhosis patients may develop liver cancer. In 2018, the World Health Organization estimated that liver cancer kills 782,000 people annually. Because of the increased incidence of obesity, hepatitis and diabetes throughout the world, NAFLD has become the most common chronic liver disease and an important cause of cirrhosis and liver cancer worldwide.

Despite the increased incidence of NAFLD and its role in the development of NASH, cirrhosis and liver cancer, we believe that no low-cost, accurate and safe method exists for measuring fat in the liver. Current liver enzyme blood tests are indicative, but cannot reliably confirm early stage NAFLD or NASH, and liver enzyme levels are normal in a large percentage of patients with NAFLD. Existing ultrasound technology can only measure fat qualitatively in the liver at moderate to severe levels, typically greater than 30% liver fat, and ultrasound has low accuracy when used on obese patients. While early stage NAFLD and NASH can be confirmed by an MRI scan, an MRI scan is expensive, and MRI systems are not widely available or practical for many patients. A surgical biopsy can be used to confirm NAFLD and NASH, but is also expensive, involves a painful procedure and exposes patients to the risk of infection and bleeding. Furthermore, MRIs and surgical biopsies are impractical for repeated screening and monitoring of liver disease. We believe these limitations negatively impact the diagnosis and treatment of patients with NAFLD.

Patients diagnosed with NAFLD and related liver diseases are typically treated with therapies such as statins, insulin sensitizers and other compounds and are encouraged to adopt lifestyle changes to improve their overall health.

A significant number of pharmaceutical compounds targeting liver disease are in development by companies such as Bristol-Myers Squibb Company, Intercept Pharmaceuticals, Inc., Genfit SA, Allergan plc, Madrigal Pharmaceuticals, Inc. and Immuron Limited.

Billions of dollars are spent annually on the diagnosis and treatment of NAFLD and related liver diseases. In the United States alone, the median Medicare inpatient charge per NAFLD patient is estimated to be \$36,000 and the total annual direct medical costs for NAFLD are estimated to be \$103 billion. Identification and staging of NAFLD is central to determining the course of treatment.

In addition, patients receiving treatment for NAFLD-spectrum liver diseases must continue to be monitored to assess disease progression and the efficacy of treatment. Because of the high cost and limited global availability, CT and MRI technology is not typically used for this function.

We believe our TAEUS technology will enable primary care physicians, radiologists and hepatologists to diagnose NAFLD earlier and monitor patients with NAFLD-spectrum liver diseases more accurately and cost-effectively than is possible with existing technology.

In April 2016, we entered into a Collaborative Research Agreement with General Electric Company, acting through its GE Healthcare business unit and the GE Global Research Center (collectively, "GE Healthcare"). Under the terms of the agreement, GE Healthcare has agreed to assist us in our efforts to commercialize our TAEUS technology for use in a fatty liver application by, among other things, providing equipment and technical advice, and facilitating introductions to GE Healthcare clinical ultrasound customers. In return for this assistance, we have agreed to afford GE Healthcare certain rights of first offer with respect to manufacturing and licensing rights for the target application. More specifically, we have agreed that, prior to commercially releasing our NAFLD TAEUS application, we will offer to negotiate an exclusive ultrasound manufacturer relationship with GE Healthcare for a period of at least one year of commercial sales. The commercial sales would involve, within our sole discretion, either our commercially selling GE Healthcare ultrasound systems as the exclusive ultrasound system with our TAEUS fatty liver application embedded, or GE Healthcare being the exclusive ultrasound manufacturer to sell ultrasound systems with our TAEUS fatty liver application embedded. The agreement with GE Healthcare does not prevent us from selling our TAEUS fatty liver application technology to distributors or directly to non-manufacturer purchasers. Additionally, the agreement provides that (1) prior to offering to license any of our TAEUS fatty liver application intellectual property to a third party, we will first offer to negotiate to license our TAEUS fatty liver application intellectual property to GE Healthcare and (2) prior to selling any equity interests to a healthcare device manufacturer, we must first offer to negotiate in good faith to sell such equity interests to GE Healthcare. The agreement is subject to termination by either party upon not less than 60 days' notice. On January 13, 2020, we and GE Healthcare entered into an amendment to our agreement, extending its term by 12 months to January 14, 2021 and modifying GE Healthcare's rights of first offer.

In November 2017 we engaged two firms that specialize in medical device software development to commence productization of our TAEUS device targeting NAFLD. The agreements call for these vendors to provide us with the specialized engineering resources necessary to translate our current prototype TAEUS device into a clinical product that meets CE regulatory requirements required for commercial launch in the European Union followed by FDA submission for the U.S. market.

In October 2018, we received an Investigational Testing Authorization ("ITA") from Health Canada to commence the first human studies in healthy volunteers with our TAEUS clinical system targeting NAFLD, guiding our algorithm development, and comparing our technology to MRI. The feasibility study is being conducted in collaboration with the widely respected Robarts Research Institute in London, Canada. The data Robarts Research Institute is collecting with our investigational device includes the following:

- Integration evaluation of hardware and software design elements of the TAEUS platform;
- Substantial user and patient human-factors data, including clinical workflow and ergonomic considerations to support our CE mark application and commercial product design; and
- Quantitative MRI liver fat fraction measurements for each study subject, that will both guide our algorithm development and provide data for initial correlation to the TAEUS measurements.

In December 2018, Robarts Research Institute completed its initial healthy subject enrollment and data collection of 25 subjects and received authorization from Health Canada to expand the study to 50 subjects. We reported the completion of this expanded study and reported top-level findings on September 26, 2019. The data collected from the study, including additional usability inputs, was included in our TAEUS liver device technical file submission for device CE mark.

Temperature Monitoring of Thermoablative Surgery

We also intend to develop a TAEUS platform application to guide thermal ablation surgery, such as in the treatment of cardiac atrial fibrillation, chronic pain and lesions of the liver, thyroid, kidneys and other soft tissues. We plan to target clinical users of thermoablative technology, including interventional radiologists, cardiologists, gynecologists and surgical oncologists.

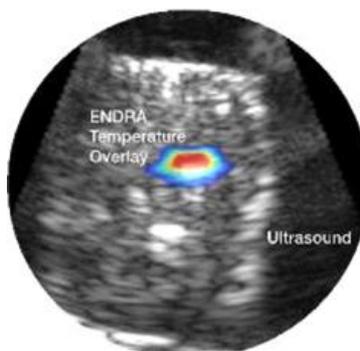
Thermoablation involves the use of heat or cold to remove malfunctioning or diseased tissue in surgical oncology, cardiology, neurology, gynecology, and urology applications. Thermoablative technologies include RF, microwave, laser and cryogenic ablation. The worldwide market for RF surgical ablation procedures alone was estimated in 2015 to be \$3.7 billion per annum, generating over 5 million annual RF ablation procedures and growing at approximately 18% annually. We believe that the growth of this market is driven primarily by the aging global population requiring more cardiac and cancer procedures, as well as the relative ease-of-use and low cost of thermoablative technologies when compared to open surgery.

However, RF and other thermoablative surgery technologies pose risks, including under-treatment of diseased tissue and unintended thermal damage to areas outside the treatment area. For example, it has been reported that patients receiving RF ablation of liver tumors have experienced thermal injury to the diaphragm, gallbladder, bile ducts and gastrointestinal tract, some of which have resulted in patient deaths.

Clinicians must rely on printed manufacturer guidelines to plan procedures using thermal ablation technologies or, when available, monitor tissue temperature changes in real-time with MRI imaging or surgical temperature probes. We believe these existing methods either lack real-time precision or are impractical due to cost, poor availability and other factors.

We believe that the ability to visualize changes in tissue temperature in real time could potentially enhance the effectiveness and safety of thermoablation therapies and that our TAEUS technology platform combined with traditional ultrasound has the potential to guide thermoablation surgery more cost-effectively and more accurately than existing methods.

Image below: Depiction of ex-vivo TAEUS tissue temperature analysis overlaid on traditional ultrasound image.



Vascular Imaging

We believe that our TAEUS technology can be used to image blood vessels and distinguish them from the surrounding tissue. In addition to our NAFLD and thermoablation applications, we intend to develop a cardiovascular application based on our TAEUS technology that, with the use of a standard saline contrast agent, can enable existing ultrasound systems to perform a number of cardiovascular diagnostic functions, such as identifying arterial plaque or blocked or malformed vessels, as well as safely guiding biopsies away from vital vasculature.

Conventional ultrasound imaging systems use Doppler imaging in a variety of vascular applications. Doppler ultrasound, which images the velocity of blood, is effective in larger vessels and regions where blood velocity is high. However, Doppler ultrasound is not sufficiently sensitive for use in very small vessels or in vascular imaging applications where blood velocities are very low. For these applications, contrast enhanced CT and MRI angiography is used which requires the patient to be injected with a contrast agent, iodinated compounds and gadolinium, respectively. Contrast-enhanced CT and MRI scans both require referral for examination after initial screening with ultrasound and carry risks associated with their respective contrast agents. We believe that our TAEUS platform has the potential to offer the advantages of CT and MR contrast enhanced imaging at the point of care using only a safe electrolyte solution as the contrast agent.

Tissue Perfusion or “Leakiness”

We believe that our TAEUS technology can be used to image tissue perfusion, or the absorption of fluids into an organ or tissue. We intend to develop an application for our TAEUS platform that would enable ultrasound detection of microvasculature fluid flows symptomatic of tissue compromised by trauma or disease.

When a person’s body is affected by disease or trauma, blood and other fluids may leak from damaged tissues in subtle ways. Traditional ultrasound cannot effectively image these disruptions in microvascular permeability, but we believe ultrasound combined with our TAEUS technology can.

We believe that, using our TAEUS technology, physicians will be able to quickly and clearly see tissue compromised by disease, such as cancer or trauma, especially with the use of a standard saline contrast agent, when CT or MRI is not readily available.

Intellectual Property

We rely on a combination of patent, copyright, trademark and trade secret laws and other agreements with employees and third parties to establish and protect our proprietary intellectual property rights. We require our officers, employees and consultants to enter into standard agreements containing provisions requiring confidentiality of proprietary information and assignment to us of all inventions made during the course of their employment or consulting relationship. We also enter into nondisclosure agreements with our commercial counterparties and limit access to, and distribution of, our proprietary information.

We are committed to developing and protecting our intellectual property and, where appropriate, filing patent applications to protect our technology. Our issued and pending patents claims are directed at the following areas related to our technology:

- Methods to induce and enhance thermoacoustic signal generation;
- System configurations, devices and novel hardware for transmission of RF pulses into tissue and detection of acoustic signals;
- Methods for integrating our devices with existing conventional ultrasound systems; and
- Methods and algorithms for signal processing, image formation and analysis.

We currently maintain a patent portfolio consisting of seven (7) patents issued in the United States and four (4) issued patents in foreign jurisdictions, twenty-four (24) patent applications pending in the United States and twenty-six (26) patent applications pending in foreign jurisdictions relating to our technology. These patents and patent applications cover certain innovations relating to contrast-enhanced imaging as well as several aspects of fat imaging and fat quantitation in the liver and other tissues. In addition, we have in-licensed license three (3) U.S. patents.

Each of our patents generally has a term of 20 years from its respective priority filing date. Among our issued patents, the first patent is set to expire in 2035 and the last patent is set to expire in 2037.

Sales and Marketing

During 2019 we hired a Chief Commercial Officer and began planning to build a sales and marketing team dedicated to our TAEUS clinical applications. In parallel to securing all necessary government marketing approvals, we intend to hire a small internal sales and marketing team to engage and support channel partners and clinical customers. As we previously did with our Nexus 128 system, we intend to partner with several geographically-focused independent clinical ultrasound equipment distributors to market and sell our TAEUS applications. We believe that these distributors have existing customer relationships, a strong knowledge of diagnostic imaging technology and the capabilities to support the installation, customer training and post-sale service of capital equipment and software.

We also intend to work with original equipment manufacturers, or OEMs, of ultrasound and thermal ablation equipment to sell our TAEUS applications alongside their own new systems and into their existing installed base systems. We believe that these OEMs will find our applications attractive as the applications would enable them to generate additional revenue from their installed systems – as they currently do with aftermarket accessory portfolios. We believe our relationship with GE Healthcare will facilitate this strategy.

Based on our design work and our understanding of the ultrasound accessory market, we intend to price our initial NAFLD TAEUS application at a price point approximating \$35,000 to \$55,000, which should enable purchasers to recoup their investment in less than one year by performing a relatively small number of additional ultrasound procedures.

Some of our future TAEUS offerings are expected to be implemented via a hardware platform that can run multiple individual software applications that we plan to offer TAEUS users for a one-time licensing fee, enabling users to perform more procedures with their existing ultrasound equipment and retaining more patients in their clinics rather than referring them out to a regional imaging medical center for a CT or MRI scan.

We also intend to offer a license for our TAEUS technology to OEMs, such as GE Healthcare, for incorporation in their new ultrasound systems.

Engineering, Design and Manufacturing

Development of TAEUS Device

We have contracted with StarFish Product Engineering, Inc. ("StarFish"), a medical device contract manufacturing company, to commence the productization of our NAFLD TAEUS application. In particular, we have retained StarFish to develop ENDRA's current prototype TAEUS device into a clinical product that meets CE regulatory requirements required for commercial launch. We have leveraged StarFish's expertise in the preparation and submission of our CE Technical File documentation, submitted in December 2019, that will enable us to sell the application in the European Union as a Class IIa medical device once a final design for our TAEUS device has been developed and tested, and expect StarFish to lead the preparation of documentation for regulatory approval submission in the United States. In order to foster collaboration, our Chief Technology Officer regularly visits StarFish's facilities to monitor the TAEUS application manufacturing process.

We believe that our contract manufacturers will either supply necessary components internally or obtain them from third-party sources. At this time, we do not know whether any components are or will be single sourced.

Regulatory Approval Pathway and Human Study

Each of our TAEUS platform applications will require regulatory approvals before we are able to sell or license the application. Based on certain factors, such as the installed base of ultrasound systems, availability of other imaging technologies, such as CT and MRI, economic strength and applicable regulatory requirements, we are seeking initial approval of our applications for sale in the European Union, and plan to seek additional approval in the United States and China.

The first TAEUS application we intend to commercialize is our NAFLD TAEUS application. Our initial target market for this application is the European Union. For commercial reasons and to support our application for CE marking, which is required before we can sell the application in the European Union we contracted with CIMTEC, a medical imaging research group, to conduct human studies through Canada-based Robarts Research Institute to demonstrate our NAFLD TAEUS application's ability to distinguish fat from lean tissue. In December 2018, Robarts Research Institute completed its initial healthy subject enrollment and data collection of 25 subjects and received authorization from Health Canada to expand the study to 50 subjects. In September 2019, we announced the completion and reported top-level findings of the expanded study, which was included in our TAEUS liver device technical file submission for device CE mark. We received CE mark approval for our NAFLD TAEUS application in March 2020. We are now in the process of notifying the competent authorities that we have received the CE mark and registering the product in each of the initial target markets.

In 2012, the European Commission proposed a new regulatory scheme that, once implemented, will impose significant additional obligations on medical device companies. Expected changes include stricter requirements for clinical evidence and pre-market assessment of safety and performance, new classifications to indicate risk levels, requirements for third party testing by government accredited groups for some types of medical devices, and tightened and streamlined quality management system assessment procedures. Such new rules could impose additional requirements on our business, such as a requirement to conduct clinical trials for future CE mark applications we make and post-market surveillance obligations, as well as the further requirements for the traceability of products, transparency, refined responsibilities for economic operators (including manufacturer, distributors and importers) as well as a tightened and more comprehensive quality management system.

Simultaneously with the process of obtaining CE mark approval for a CE mark for our NAFLD TAEUS application, we have begun preparing for submission to the U.S. Food and Drug Administration (the "FDA") an application under the Food, Drug and Cosmetic Act (the "FD&C Act") to sell our NAFLD TAEUS application in the U.S. We anticipate that the application, as well as those for any other TAEUS applications that we develop, will be submitted for approval under Section 510(k) of the FD&C Act. We expect that our initial FDA clearance will allow us to sell the NAFLD TAEUS application in the U.S. with general imaging claims. However, we will need to obtain additional FDA clearances to be able to make diagnostic claims for fatty tissue content determination. Accordingly, to support our commercialization efforts we expect that, following receipt of our initial FDA clearance, we would submit one or more additional applications to the FDA, each of which would need to include additional clinical trial data, so that following receipt of the necessary clearances we may make those diagnostic claims.

Regulation

European Union

The primary regulatory environment in Europe is the European Union, which consists of 27 member states encompassing most of the major countries in Europe. We believe that in the European Union applications incorporating our TAEUS technology will be regulated as Class IIa medical devices by the European Medicines Agency (the "EMA") and the European Union Commission. As described above, our NAFLD TAEUS application has received, and we expect our future applications will need to receive, a CE mark from an appropriate Competent Authority or government-accredited group (a "Notified Body"), as the case may be, as a result of successful review of one or more submissions prepared by our contract engineering and manufacturer(s), so that such applications can be marketed and distributed within the European Economic Area. Each of our applications will be required to be recertified each year for CE marking, which recertification may require an annual audit. The audit procedure, which will include on-site visits at our facility, and the contract manufacturer's(s') facility(ies), will require us to provide the contract manufacturer(s) with information and documentation concerning our quality management system and all applicable documents, policies, procedures, manuals, and other information.

In the European Union, the manufacturer of medical devices is subject to current Good Manufacturing Practice, or cGMP, as set forth in the relevant laws and guidelines of the European Union and its member states. Compliance with cGMP is generally assessed by a Notified Body accredited by a Competent Authority. For a Class IIa device, typically, quality system evaluation is performed by the Notified Body, which also recommends to the relevant Competent Authority for the European community whether a device will receive a CE mark. The Notified Body may conduct inspections of relevant facilities, and review manufacturing procedures, operating systems and personnel qualifications. In addition to obtaining approval for each application, in many cases each device manufacturing facility must be audited on a periodic basis by the Notified Body. Further inspections may occur over the life of the application.

FDA Regulation

Each of our products must be approved or cleared by the FDA before it is marketed in the United States. Before and after approval or clearance in the United States, our applications are subject to extensive regulation by the FDA under the FD&C Act and/or the Public Health Service Act, as well as by other regulatory bodies. The FDA regulations govern, among other things, the development, testing, manufacturing, labeling, safety, storage, record-keeping, market clearance or approval, advertising and promotion, import and export, marketing and sales, and distribution of medical devices and pharmaceutical products.

FDA Approval or Clearance of Medical Devices

In the United States, medical devices are subject to varying degrees of regulatory control and are classified in one of three classes depending on the extent of controls the FDA determines are necessary to reasonably ensure their safety and efficacy:

- Class I: general controls, such as labeling and adherence to quality system regulations;
- Class II: special controls, 510(k) submission, specific controls such as performance standards, patient registries and post-market surveillance and additional controls such as labeling and adherence to quality system regulations; and
- Class III: special controls and approval of a premarket approval, or PMA, application.

We expect all of our products to be classified as Class II medical devices and thus require FDA authorization prior to marketing by means of a 510(k) clearance rather than a PMA application.

To request marketing authorization by means of a 510(k) clearance, we must submit a notification demonstrating that the proposed device is substantially equivalent to another legally marketed medical device, has the same intended use, and is as safe and effective as a legally marketed device and does not raise different questions of safety and effectiveness than a legally marketed device. 510(k) submissions generally include, among other things, a description of the device and its manufacturing, device labeling, medical devices to which the device is substantially equivalent, safety and biocompatibility information and the results of performance testing. In some cases, a 510(k) submission must include data from human clinical studies. Marketing may commence only when the FDA issues a clearance letter finding substantial equivalence. The typical duration to receive a 510(k) approval is approximately nine to twelve months from the date of the initial 510(k) submission, although there is no guarantee that the timing will not be longer.

In the past, the 510(k) pathway for product marketing has required only proof of substantial equivalence in technology for a given indication with a previously cleared device. Recently, there has been a trend of the FDA requiring additional clinical work to prove efficacy in addition to technological equivalence and basic safety. Whether clinical data is provided or not, the FDA may decide to reject the substantial equivalence argument we present. If that happens, the device is automatically designated as a Class III device. The device sponsor must then fulfill more rigorous PMA requirements, or can request a risk-based classification determination for the device in accordance with the “de novo” process, which may determine that the new device is of low to moderate risk and that it can be appropriately be regulated as a Class I or II device. If a de novo request is granted, the device may be legally marketed and a new classification is established. If the device is classified as Class II, the device may serve as a predicate for future 510(k) submissions. If the device is not approved through de novo review, then it must go through the standard PMA process for Class III devices.

After a device receives 510(k) clearance, any product modification that could significantly affect the safety or effectiveness of the product, or that would constitute a significant change in intended use, requires a new 510(k) clearance or, if the device would no longer be substantially equivalent, a PMA. If the FDA determines that the product does not qualify for 510(k) clearance, then a company must submit, and the FDA must approve, a PMA before marketing can begin.

A PMA application must provide a demonstration of safety and effectiveness, which generally requires extensive pre-clinical and clinical trial data. Information about the device and its components, device design, manufacturing and labeling, among other information, must also be included in the PMA. As part of the PMA review, the FDA will inspect the manufacturer’s facilities for compliance with quality system regulation requirements, which govern testing, control, documentation and other aspects of quality assurance with respect to manufacturing. If the FDA determines the application or manufacturing facilities are not acceptable, the FDA may outline the deficiencies in the submission and often will request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. During the review period, a FDA advisory committee, typically a panel of clinicians and statisticians, is likely to be convened to review the application and recommend to the FDA whether, or upon what conditions, the device should be approved. The FDA is not bound by the advisory panel decision. While the FDA often follows the panel’s recommendation, there have been instances in which the FDA has not. The FDA must find the information to be satisfactory in order to approve the PMA. The PMA approval can include post-approval conditions, including, among other things, restrictions on labeling, promotion, sale and distribution, or requirements to do additional clinical studies after approval. Even after approval of a PMA, a new PMA or PMA supplement is required to authorize certain modifications to the device, its labeling or its manufacturing process. Supplements to a PMA often require the submission of the same type of information required for an original PMA, except that the supplement is generally limited to that information needed to support the proposed change from the product covered by the original PMA. The typical duration to receive PMA approval is approximately two years from the date of submission of the initial PMA application, although there is no guarantee that the timing will not be longer.

Clinical Trials of Medical Devices

One or more clinical trials are generally required to support a PMA application and more recently are becoming necessary to support a 510(k) submission. Clinical studies of unapproved or uncleared medical devices or devices being studied for uses for which they are not approved or cleared (investigational devices) must be conducted in compliance with FDA requirements. If an investigational device could pose a significant risk to patients, the sponsor company must submit an investigational device exemption application to the FDA prior to initiation of the clinical study. An investigational device exemption application must be supported by appropriate data, such as animal and laboratory test results, showing that it is safe to test the device on humans and that the testing protocol is scientifically sound. The investigational device exemption will automatically become effective 30 days after receipt by the FDA unless the FDA notifies the company that the investigation may not begin. Clinical studies of investigational devices may not begin until an institutional review board has approved the study.

During the study, the sponsor must comply with the FDA’s investigational device exemption requirements. These requirements include investigator selection, trial monitoring, adverse event reporting, and record keeping. The investigators must obtain patient informed consent, rigorously follow the investigational plan and study protocol, control the disposition of investigational devices, and comply with reporting and record keeping requirements. The sponsor, the FDA, or the institutional review board at each institution at which a clinical trial is being conducted may suspend a clinical trial at any time for various reasons, including a belief that the subjects are being exposed to an unacceptable risk. During the approval or clearance process, the FDA typically inspects the records relating to the conduct of one or more investigational sites participating in the study supporting the application.

Post-Approval Regulation of Medical Devices

After a device is cleared or approved for marketing, numerous and pervasive regulatory requirements continue to apply. These include:

- the FDA quality systems regulation, which governs, among other things, how manufacturers design, test, manufacture, exercise quality control over, and document manufacturing of their products;
- labeling and claims regulations, which prohibit the promotion of products for unapproved or “off-label” uses and impose other restrictions on labeling; and
- the Medical Device Reporting regulation, which requires reporting to the FDA of certain adverse experiences associated with use of the product.

Good Manufacturing Practices Requirements

Manufacturers of medical devices are required to comply with the good manufacturing practices set forth in the quality system regulation promulgated under Section 520 of the FD&C Act. Current good manufacturing practices regulations require, among other things, quality control and quality assurance as well as the corresponding maintenance of records and documentation. The manufacturing facility for an approved product must be registered with the FDA and meet current good manufacturing practices requirements to the satisfaction of the FDA pursuant to a pre-PMA approval inspection before the facility can be used. Manufacturers, including third party contract manufacturers, are also subject to periodic inspections by the FDA and other authorities to assess compliance with applicable regulations. Failure to comply with statutory and regulatory requirements subjects a manufacturer to possible legal or regulatory action, including the seizure or recall of products, injunctions, consent decrees placing significant restrictions on or suspending manufacturing operations, and civil and criminal penalties. Adverse experiences with the product must be reported to the FDA and could result in the imposition of marketing restrictions through labeling changes or in product withdrawal. Product approvals may be withdrawn if compliance with regulatory requirements is not maintained or if problems concerning safety or efficacy of the product occur following the approval.

China Regulation

China’s regulatory approval framework includes nationwide approval based on a showing that the device for which approval is sought has been previously approved in the country of origin. Alternatively, we understand it is also possible to receive approval at the provincial level or to work exclusively with hospitals that do not require such nationwide or provincial approval. We intend to explore these potential paths to regulatory compliance in China.

Other Regulations

We will become subject to regulations and product registration requirements in many foreign countries in which we may sell our products, including in the areas of product standards, packaging requirements, labeling requirements, import and export restrictions and tariff regulations, duties and tax requirements. Additionally, third parties designing, manufacturing or conducting human studies of our devices will be subject to local regulations, such as those of Health Canada. The time required to obtain clearance required by foreign countries may be longer or shorter than that required for EMA or FDA clearance, and requirements for licensing a product in a foreign country may differ significantly from EMA and FDA requirements.

Competition

While we believe that we are the only company developing RF-based thermoacoustic ultrasound products, we will face direct and indirect competition from a number of competitors, many of whom have greater financial, sales and marketing and other resources than we do.

Manufacturers of CT and MRI systems include multi-national corporations such as Royal Philips, Siemens AG and Hitachi, Ltd., many of whom also manufacture and sell ultrasound equipment. In the NAFLD diagnosis market we will compete with makers of surgical biopsy tools, such as Cook Medical and SteryLab S.r.l. In the thermal ablation market, we will compete with manufacturers of surgical temperature probes, such as Medtronic plc and St. Jude Medical, Inc.

Employees

As of December 31, 2019, we had 15 employees, all of whom are employed on a full-time basis. 9 full-time employees were engaged in research and development activities, 2 full-time employees were engaged in sales activities, 1 full-time employee was engaged in product assembly, and 3 full-time employees were engaged in administrative activities. None of our employees are covered by a collective bargaining agreement, and we believe our relationship with our employees is good.

We also employ technical advisors, on an as-needed basis, to supplement existing staff. We believe that these technical advisors provide us with necessary expertise in clinical ultrasound applications, ultrasound technology, and intellectual property.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the following risks and all other information contained in this Annual Report, including our financial statements and the related notes, before investing in our securities. The risks and uncertainties described below are not the only ones we face, but include the most significant factors currently known by us that make investing in our securities speculative or risky. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, also may become important factors that affect us. If any of the following risks materialize, our business, financial condition and results of operations could be materially harmed. In that case, the trading price of our securities could decline, and you may lose some or all of your investment.

Risks Related to Our Business

We have a history of operating losses, we may never achieve or maintain profitability, and we will need to raise significant additional capital if we are going to continue as a going concern.

We have limited commercial experience upon which investors may evaluate our prospects. We have only generated limited revenues to date and have a history of losses from operations. As of December 31, 2019, we had an accumulated deficit of approximately \$45.2 million. Our independent registered public accounting firm, in its report on our financial statements for the year ended December 31, 2019, has raised substantial doubt about our ability to continue as a going concern.

We will require additional capital in the near term to continue as a going concern to proceed with the commercialization of our planned TAEUS applications and to meet our growth and profitability targets. We have expended and expect to continue to expend significant resources on hiring of personnel, payroll and benefits, continued scientific and potential product research and development, potential product testing and pre-clinical and clinical investigations, expenses associated with the development of relationships with strategic partners, intellectual property development and prosecution, marketing and promotion, capital expenditures, working capital, and general and administrative expenses. We also expect to incur costs and expenses related to consulting, laboratory development, and the hiring of scientists and other operational personnel.

We may not be able to secure financing on favorable terms, or at all, to meet our future capital needs and our failure to obtain financing when needed could force us to delay, reduce or eliminate our product development programs and commercialization efforts.

We will need to raise additional capital in order to finance the full commercialization of our first TAEUS application in the European Union and to complete the development of any other TAEUS application through public or private equity offerings, debt financings, corporate collaboration and licensing arrangements or other financing alternatives.

To date, we have financed our operations primarily through the net proceeds from offerings of common stock and convertible notes, as well as sales of our discontinued Nexus 128 system. We do not know when or if our operations will generate sufficient cash to fund our ongoing operations. Therefore, we will require additional capital in order to: (i) continue to conduct research and development activities; (ii) continue to conduct clinical studies; (iii) fund the costs of seeking regulatory approval of TAEUS applications; (iv) expand our sales and marketing infrastructure; (v) acquire complementary business technology or products; and (vi) respond to business opportunities, challenges, increased regulatory obligations or unforeseen circumstances. Our future funding requirements will depend on many factors, including, but not limited to:

- the costs, timing and outcomes of regulatory reviews associated with our future products, including TAEUS applications;
- the progress, timing, costs and outcomes of our clinical trials, including the ability to timely enroll patients in our planned and potential future clinical trials;
- the costs and expenses of expanding our sales and marketing infrastructure;
- the costs and timing of developing variations of our TAEUS applications and, if necessary, obtaining regulatory clearance of such variations;
- the degree of success we experience in commercializing our products, particularly our TAEUS applications;
- the extent to which our TAEUS applications are adopted by hospitals for use by primary care physicians, hepatologists, radiologists and oncologists for diagnosis of fatty liver disease and the thermal ablation of lesions;
- the number and types of future products we develop and commercialize;

- the costs of preparing, filing and prosecuting patent applications and maintaining, enforcing and defending intellectual property-related claims;
- the extent and scope of our general and administrative expenses;
- the outcome, timing and cost of regulatory approvals, including the potential that the FDA or comparable regulatory authorities may require that we perform more studies than those that we currently expect;
- the amount of sales and other revenues from technologies and products that we may commercialize, if any, including the selling prices for such potential products and the availability of adequate third-party reimbursement;
- selling and marketing costs associated with our potential products, including the cost and timing of expanding our marketing and sales capabilities;
- the terms and timing of any potential future collaborations, licensing or other arrangements that we may establish;
- cash requirements of any future acquisitions and/or the development of other products;
- the costs of operating as a public company;
- the cost and timing of completion of commercial-scale, outsourced manufacturing activities; and
- the time and cost necessary to respond to technological and market developments.

We may raise funds in equity or debt financings or enter into credit facilities in order to access funds for our capital needs. Any debt financing obtained by us in the future would cause us to incur debt service expenses and could include restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and pursue business opportunities. If we raise additional funds through issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution in their percentage ownership of our Company, and any new equity securities we issue could have rights, preferences and privileges senior to those of holders of our common stock. See "*Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plan, could result in dilution of the percentage ownership of our stockholders and could cause the price of our securities to fall.*" below. In addition, if we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or products or to grant licenses on terms that may not be favorable to us and our collaborators and strategic partners may not perform as expected.

General market conditions or the market price of our common stock may not support capital raising transactions such as a public or private offering of our common stock or other securities. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, we may terminate or delay the development of one or more of our products, or delay establishment of sales and marketing capabilities or other activities necessary to commercialize our products, or materially curtail or reduce our operations. We could be forced to sell or dispose of our rights or assets. Any inability to raise adequate funds on commercially reasonable terms could have a material adverse effect on our business, results of operation and financial condition, including the possibility that a lack of funds could cause our business to fail and liquidate with little or no return to investors.

Our efforts may never result in the successful development of commercial applications based on our TAEUS technology.

Our TAEUS technology is still in development and we do not have any applications for our TAEUS technology approved for sale. Applications for our TAEUS technology may never be approved, become commercially viable or generate significant revenue. Our ability to generate significant revenues and, ultimately, achieve profitability will depend on whether we can obtain additional capital when we need it, complete the development of our technology, receive required regulatory approvals for our TAEUS applications and find customers who will purchase our future products or strategic partners that will incorporate our technology into their products. Even if we develop commercially viable applications for our TAEUS technology, which may include licensing, we may never recover our research and development expenses and we may never be able to produce material revenues or operate on a profitable basis.

Our research and development efforts remain subject to all of the risks associated with the development of new products based on emerging technologies, including, without limitation, unanticipated technical or other problems, the inability to develop a product that may be sold at an acceptable price point and the possible insufficiency of funds needed in order to complete development of these products. Technical problems may result in delays and cause us to incur additional expenses that would increase our losses. If we cannot complete, or if we experience significant delays in developing applications based on, our TAEUS technology, particularly after incurring significant expenditures, our business may fail.

Our success is substantially dependent on the success of applications for our TAEUS platform.

Our ability to generate meaningful revenues in the future will depend on the successful development and commercialization of our TAEUS platform applications. The commercial success of our TAEUS platform applications and our ability to generate revenues will depend on many factors, including the following:

- our successful development of applications for our TAEUS technology, such as those we intend to pursue for the diagnosis of NAFLD and the monitoring of thermal ablation surgery, and the acceptance in the marketplace by physicians and patients of such applications;
- the successful design and manufacturing of a device or devices which enable the use of our TAEUS technology by physicians on their patients;
- receipt of necessary regulatory approvals;
- sufficient coverage or reimbursement by third-party payors;
- our ability to successfully market our products;
- our ability to demonstrate that our TAEUS applications have advantages over competing products and procedures;
- the amount and nature of competition from competing or alternative imaging products; and
- our ability to establish and maintain commercial manufacturing, distribution and sales force capabilities.

Our TAEUS platform applications may not achieve adequate market acceptance by the physicians, patients, third-party payors and others in the medical community.

Even if any of our TAEUS applications receives regulatory approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. If our TAEUS applications do not achieve an adequate level of acceptance, we may not generate significant product revenues or any profits from sales. The degree of market acceptance of products based on our TAEUS platform will depend on a number of factors, including:

- potential or perceived advantages or disadvantages compared to alternative products;
- pricing relative to competitive products and availability of third-party coverage or reimbursement;
- the timing of bringing our product to market as compared to possible other new entrants to the market;
- our ability to effectively raise market awareness and explain product benefits and whether we have resources sufficient to do so;
- relative convenience, dependability and ease of administration; and
- willingness of the target patient population to try new products and of physicians to utilize such products.

Our revenues will be adversely affected if, due to these or other factors, the products we are able to commercialize do not gain significant market acceptance.

A pandemic, epidemic, or outbreak of an infectious disease, such as COVID-19, or coronavirus, may materially and adversely affect our business and our financial results.

The spread of COVID-19 has affected segments of the global economy and may affect our operations, including the potential interruption of our clinical trial activities and our supply chain. The recent outbreak of COVID-19 originated in Wuhan, China in December 2019 and has since spread to multiple countries and, in particular, European countries comprising certain of our target markets. The continued spread of COVID-19 may result in a period of business disruption, including delays in our clinical trials or delays or disruptions in our commercialization efforts. In addition, there could be a potential effect of COVID-19 to the business at FDA or other health authorities, which could result in delays of reviews and approvals, including with respect to our product candidates.

The continued spread of COVID-19 globally could adversely affect our clinical trial operations in the United States and elsewhere, including our ability to recruit and retain patients and principal investigators and site staff who, as healthcare providers, may have heightened exposure to COVID-19 if an outbreak occurs in their geography. Further, some patients may be unable to comply with clinical trial protocols if quarantines or travel restrictions impede patient movement or interrupt healthcare services, or if the patients become infected with COVID-19 themselves, which would delay our ability to conduct clinical trials or release clinical trial results. COVID-19 may also affect employees of third-party contract research organizations located in affected geographies that we rely upon to carry out our clinical trials, which could result in inefficiencies due to reductions in staff and disruptions to work environments.

The spread of COVID-19, or another infectious disease, could also negatively affect the operations at our third-party manufacturers, which could result in delays or disruptions in the commercialization of our products. In addition, we may take temporary precautionary measures intended to help minimize the risk of the virus to our employees, including temporarily requiring all employees to work remotely, suspending all non-essential travel worldwide for our employees, and discouraging employee attendance at industry events and in-person work-related meetings, which could negatively affect our business.

We cannot presently predict the scope and severity of any potential business shutdowns or disruptions. If we or any of the third parties with whom we engage, however, were to experience shutdowns or other business disruptions, our ability to conduct our business in the manner and on the timelines presently planned could be materially and negatively affected, which could have a material adverse impact on our business and our results of operation and financial condition.

We may not remain commercially viable if there is an inadequate level of reimbursement by governmental programs and other third-party payors for our planned products or associated procedures.

Medical imaging products are purchased principally by hospitals, physicians and other healthcare providers around the world that typically bill various third-party payors, including governmental programs (e.g., Medicare and Medicaid in the United States), private insurance plans and managed care programs, for the services provided to their patients.

Third-party payors and governments may approve or deny coverage for certain technologies and associated procedures based on independently determined assessment criteria. Reimbursement decisions by payors for these services are based on a wide range of methodologies that may reflect the services' assessed resource costs, clinical outcomes and economic value. These reimbursement methodologies and decisions confer different, and sometimes conflicting, levels of financial risk and incentives to healthcare providers and patients, and these methodologies and decisions are subject to frequent refinements. Third-party payors are also increasingly adjusting reimbursement rates, often downwards, indirectly challenging the prices charged for medical products and services. There can be no assurance that our products will be covered by third-party payors, that adequate reimbursement will be available or, even if payment is available, that third-party payors' coverage policies will not adversely affect our ability to sell our products profitably.

We have limited data regarding the efficacy of our TAEUS platform applications. If any of our applications that receive regulatory approval do not perform in accordance with our expectations, we are unlikely to successfully commercialize our applications.

Since our success depends in large part on the medical and third-party payors community's acceptance of our TAEUS applications, even if we receive regulatory approval for our applications, we believe that we will need to obtain additional clinical data from users of our applications to persuade medical professions to use our applications. We may also be required to conduct post-approval clinical testing to obtain such additional data. Clinical testing is expensive, can take a significant amount of time to complete and can have uncertain outcomes. Negative results of these clinical studies could have a material, adverse impact on our business.

We cannot be certain that results from limited animal and human studies of any of our TAEUS applications will be indicative of future studies or that any of our TAEUS applications will be successfully commercialized.

To successfully commercialize any application based on our TAEUS platform technology, we expect it will be necessary to conduct various pre-clinical and human studies to demonstrate that the product is safe and effective for human use. In October 2018 we initiated certain human studies of our TAEUS device targeting NAFLD which are expected to provide key insights into clinical work flow and quantitative methodologies for the device. In September 2019, we reported top-level findings from a clinical study conducted by CIMTEC relating to the feasibility of our TAEUS application for NAFLD. However, there can be no assurance that results from this study is indicative of results that would be achieved in future animal studies or human clinical studies, which may be required in order for our applications incorporating our technology to obtain or maintain regulatory approval. Even if clinical trials or other studies demonstrate safety and effectiveness of any of product candidates incorporating our technology for a specific disease or condition and the necessary regulatory approvals are obtained, the commercial success of any of such product candidates will depend upon their acceptance by patients, the medical community, and third-party payers and on our partners' ability to successfully manufacture and commercialize such product candidates.

Our limited commercial experience makes it difficult to evaluate our business, predict our future results or forecast our financial performance and growth.

We were incorporated in 2007 and began commercializing our initial pre-clinical Nexus 128 product in 2010. Our NAFLD TAEUS device has obtained CE mark approval but has not yet been fully commercialized. This limited commercial experience makes it difficult to evaluate our business, predict our future results or forecast our financial performance and growth. If our assumptions regarding the risks and uncertainties we face, which we use to plan our business, are incorrect or change due to circumstances in our business or our markets, or if we do not address these risks successfully, our operating and financial results could differ materially from our expectations and our business could suffer.

We have formed, and may in the future form or seek, strategic alliances and collaborations or enter into licensing arrangements, and we may not realize the benefits of such alliances, collaborations or licensing arrangements.

In April 2016, we entered into a Collaborative Research Agreement with GE Healthcare, under which GE Healthcare has agreed to support our efforts to commercialize our TAEUS technology for use in an NAFLD application by, among other things, providing equipment and technical advice, and facilitating introductions to GE Healthcare clinical ultrasound customers. This agreement does not commit GE Healthcare to a long-term relationship and it may disengage with us at any time. This agreement has a term lasting until January 14, 2021 and is subject to termination by either party upon not less than 60 days' notice. See the section of this Annual Report titled "Collaboration with GE Healthcare" under "Item 1. Business" for further description of this agreement.

We intend in the future to form or seek additional strategic alliances, create joint ventures or collaborations or enter into licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our technologies and applications.

Any of these relationships may require us to incur non-recurring and other charges, increase our near- and long-term expenditures, issue securities that dilute our existing stockholders, restrict our ability to collaborate with other third parties or otherwise disrupt our management and business. In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. If we license technologies or applications, we may not be able to realize the intended benefit of such transactions. Further, strategic alliances and collaborations are subject to numerous risks, which may include the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to a collaboration;
- collaborators may not pursue development and commercialization of our technologies and applications or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in their strategic focus due to the acquisition of competitive products, availability of funding, or other external factors, such as a business combination that diverts resources or creates competing priorities;

- collaborators may delay clinical trials, provide insufficient funding for a clinical trial, stop a clinical trial, abandon the development of an application, repeat or conduct new clinical trials, or require a new formulation of an application for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our applications and technologies;
- a collaborator with marketing and distribution rights to one or more applications may not commit sufficient resources to their marketing and distribution;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that cause the delay or termination of the research, development or commercialization of our technologies and applications, or that result in costly litigation or arbitration that diverts management attention and resources;
- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable applications or technologies; and
- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we would not have the exclusive right to commercialize such intellectual property.

As a result, if we enter into collaboration agreements and strategic partnerships or license our applications or technologies, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture, which could delay our timelines or otherwise adversely affect our business. We also cannot be certain that, following a strategic transaction or license, we will achieve the revenue or specific net income that justifies such transaction. Any delays in entering into new strategic partnership agreements related to our applications could delay the development and commercialization of our technologies and applications in certain geographies or for certain applications, which would harm our business prospects, financial condition and results of operations.

We have limited resources and depend on third parties to design and manufacture, and seek regulatory approval of, our TAEUS applications. If any third party fails to successfully design, manufacture or obtain regulatory approval of TAEUS applications, our business will be materially harmed.

We do not currently have, nor do we plan to acquire, the infrastructure or capability to design or manufacture our TAEUS applications. To support our design and manufacturing efforts, we have contracted StarFish Product Engineering, Inc., a medical device contract manufacturing company, rather than design or manufacture our TAEUS applications ourselves. We have limited control over the efforts and resources that these and any other third-party original equipment manufacturers (“OEMs”) will devote to developing and manufacturing our TAEUS applications and their capabilities to serve our needs, including quality control, quality assurance and qualified personnel. In addition, we currently expect to depend on OEMs to acquire CE marks for the device or devices that they develop and manufacture which are necessary to permit marketing of those devices in the European Union followed by corresponding FDA approval.

An OEM may not be able to successfully design and manufacture the products it develops based on our TAEUS technology, may not devote sufficient time and resources to support these efforts or may fail in gaining the required regulatory approvals of our TAEUS applications. The failure by an OEM to perform in accordance with our expectations would substantially harm the value of our TAEUS technology, brand and business.

We will need to develop marketing and distribution capabilities both internally and through our relationships with third parties in order to sell any of our TAEUS products receiving regulatory approval. If we experience problems in developing these capabilities, our ability to sell our products could be limited.

We have limited experience selling our products and will need to develop marketing, sales and distribution capabilities in order to sell our TAEUS applications that receive the necessary regulatory approval. We have limited experience managing a sales force and customer support operations and may be unable to attract, retain and manage the collaborative manufacturing and distribution arrangements or the specialized workforce necessary to successfully commercialize our products. In addition, our sales and marketing organization must effectively explain the uses and benefits of our products as compared to alternatives in order to promote market acceptance and demand for our products. Developing these functions is time consuming and expensive and our efforts may not be successful.

We intend to partner with others to assist us with some or all of these functions. However, we may be unable to find appropriate third parties with which to enter into these arrangements and any such third parties may not perform as expected.

Furthermore, third-party distributors that are in the business of selling other medical products may not devote a sufficient level of resources and support required to generate awareness of our TAEUS applications and grow or maintain product sales. If these distributors are unwilling or unable to market and sell our products, or if they do not perform to our expectations, we could experience delayed or reduced market acceptance and sales of our products. In addition, disagreements with our distributors or non-performance by these third parties could lead to costly and time-consuming litigation or arbitration and disrupt distribution channels for a period of time and require us to re-establish a distribution channel.

If we are unable to manage the growth of our business, our future revenues and operating results may be harmed.

Because of our small size, growth in accordance with our business plan, if achieved, will place a significant strain on our financial, technical, operational and management resources. As we expand our activities, there will be additional demands on these resources. The failure to continually upgrade our technical, administrative, operating and financial control systems or the occurrence of unexpected expansion difficulties, including issues relating to our research and development activities and retention of experienced scientists, managers and technicians, could have a material adverse effect on our business, financial condition and results of operations and our ability to timely execute our business plan. If we are unable to implement these actions in a timely manner, our results may be adversely affected.

Competition in the medical imaging market is intense and we may be unable to successfully compete.

In general, competition in the medical imaging market is very significant and characterized by extensive research and development and rapid technological change. Competitors in this market include very large companies with significantly greater resources than we have. To successfully compete in this market we will need to develop TAEUS applications that offer significant advantages over alternative imaging products and procedures for such applications.

While we believe the technology behind our TAEUS platform is unique in the industry, developments by other medical imaging companies of new or improved products, processes or technologies may make our products or proposed products obsolete or less competitive. Alternative medical imaging devices may be more accepted or cost-effective than our products. Competition from these companies for employees with experience in the medical imaging industry could result in higher turnover of our employees. If we are unable to respond to these competitive pressures, we could experience delayed or reduced market acceptance of our products, higher expenses and lower revenue. If we are unable to compete effectively with current or new entrants to these markets, we will be unable to generate sufficient revenue to maintain our business.

Changes in the healthcare industry could result in a reduction in the size of the market for our products or may require us to decrease the selling price for our products, either of which could have a negative impact on our financial performance.

Trends toward managed care, healthcare cost containment, and other changes in government and private sector initiatives in Europe, the United States and China are placing increased emphasis on lowering the cost of medical services, which could adversely affect the demand for or the prices of our products. For example:

- major third-party payors of hospital and non-hospital based healthcare services could revise their payment methodologies and impose stricter standards for reimbursement of imaging procedures charges and/or a lower or more bundled reimbursement;
- there has been a consolidation among healthcare facilities and purchasers of medical devices who prefer to limit the number of suppliers from whom they purchase medical products, and these entities may decide to stop purchasing our products or demand discounts on our prices;
- there is economic pressure to contain healthcare costs in markets throughout the world; and
- there are proposed and existing laws and regulations in international and domestic markets regulating pricing and profitability of companies in the healthcare industry.

These trends could lead to pressure to reduce prices for our products and could cause a decrease in the demand for our products in any given market that could adversely affect our revenue and profitability, which could harm our business.

We intend to market our TAEUS applications, if approved, globally, in which case we will be subject to the risks of doing business outside of the United States.

Because we intend to market our TAEUS applications, if approved, globally, our business may be subject to risks associated with doing business globally. Accordingly, our business and financial results in the future could be adversely affected due to a variety of factors, including:

- changes in a specific country's or region's political and cultural climate or economic condition;
- unexpected changes in laws and regulatory requirements in local jurisdictions;
- difficulty of effective enforcement of contractual provisions in local jurisdictions;
- inadequate intellectual property protection in certain countries;
- trade-protection measures, import or export licensing requirements such as Export Administration Regulations promulgated by the United States Department of Commerce and fines, penalties or suspension or revocation of export privileges;
- effects of applicable local tax structures and potentially adverse tax consequences; and
- significant adverse changes in currency exchange rates.

We depend on our senior management team and the loss of one or more key employees or an inability to attract and retain highly skilled employees could harm our business.

Our success largely depends upon the continued services of our executive management team and key employees. The loss of one or more of our executive officers or key employees could harm us and directly impact our financial results. Our employees may terminate their employment with us at any time. Our executive management team has significant experience and knowledge of medical devices and ultrasound systems, and the loss of any team member could impair our ability to design, identify, and develop new intellectual property and new scientific or product ideas. Additionally, if we lose the services of any of these persons, we would likely be forced to expend significant time and money in the pursuit of replacements, which may result in a delay in the implementation of our business plan and plan of operations. We can give no assurance that we could find satisfactory replacements for these individuals on terms that would not be unduly expensive or burdensome to us.

To execute our growth plan, we must attract and retain highly qualified personnel. Competition for skilled personnel is intense, especially for engineers with high levels of experience in designing and developing medical devices. In addition, we will need to identify and hire sales executives and competition for commercial and marketing talent is significant. We may experience difficulty in hiring and retaining employees with appropriate qualifications. Many of the companies with which we compete for experienced personnel have greater resources than we have. In addition, we invest significant time and expense in training our employees, which increases their value to competitors who may seek to recruit them. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects would be harmed.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk of fraud, misconduct or other illegal activity by our employees, independent contractors, consultants, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and negligent conduct that fails to: comply with the FD&C Act and similar laws of other countries, or the rules and regulations of the FDA and other similar foreign regulatory bodies; provide true, complete and accurate information to the FDA and other similar foreign regulatory bodies; comply with manufacturing standards we establish; comply with healthcare fraud and abuse laws in the United States and similar foreign fraudulent misconduct laws; or report financial information or data accurately or to disclose unauthorized activities to us. If we obtain European, Chinese or FDA approval of any of our products and begin commercializing those products in Europe, China or the United States, respectively, our potential exposure under such laws will increase significantly, and our costs associated with compliance with such laws are also likely to increase. In particular, the promotion, sales and marketing of healthcare items and services, as well as certain business arrangements in the healthcare industry, are subject to extensive laws designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, structuring and commissions, certain customer incentive programs and other business arrangements generally. It is not always possible to identify and deter misconduct by employees and other parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

Misdiagnosis, warranty and other claims, as well as product field actions and regulatory proceedings, initiated against us could increase our costs, delay or reduce our sales and damage our reputation, adversely affecting our financial condition.

Our business exposes us to the risk of malpractice, warranty or product liability claims inherent in the sale and support of medical device products, including those based on claims that the use or failure of one of our products resulted in a misdiagnosis or harm to a patient. Such claims may cause financial loss, damage our reputation by raising questions about our products' safety and efficacy, adversely affect regulatory approvals and interfere with our efforts to market our products. Although to date we have not been involved in any medical malpractice or product liability litigation, we may incur significant liability if such litigation were to occur. We may also face adverse publicity resulting from product field actions or regulatory proceedings brought against us. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability or related claims, we may incur substantial liabilities or be required to limit distribution of our products. Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our products;
- injury to our reputation and negative media attention;
- initiation of investigations by regulators;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;

- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- exhaustion of any available insurance and our capital resources;
- the inability to commercialize a product at all or for particular applications; and
- a decline in the price of our securities.

Although we currently maintain liability insurance in amounts we believe are commercially reasonable, any liability we incur may exceed our insurance coverage. Our insurance policies may also have various exclusions, and we may be subject to a claim for which we have no coverage. Liability insurance is expensive and may cease to be available on acceptable terms, if at all. A malpractice, warranty, product liability or other claim or product field action not covered by our insurance or exceeding our coverage could significantly impair our financial condition. In addition, a product field action or a liability claim against us could significantly harm our reputation and make it more difficult to obtain the funding and commercial relationships necessary to maintain our business.

Our internal computer systems, or those used by third-party manufacturers or other contractors or consultants, may fail or suffer security breaches.

Despite the implementation of security measures, our internal computer systems and those of our future manufacturers and other contractors and consultants are vulnerable to damage from computer viruses and unauthorized access. Although to our knowledge we have not experienced any such material system failure or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our research and development programs and our business operations. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development and commercialization of our products could be delayed.

The United Kingdom's leaving the European Union has uncertain effects and could adversely affect us.

In June 2016, the United Kingdom held a referendum in which a majority of voters voted to exit the European Union ("EU"), commonly referred to as "Brexit", and in March 2017, notified the EU that it intended to exit as provided in Article 50 of the Treaty of Lisbon. The United Kingdom exited the EU on January 31, 2020 and entered a transition period which extends through December 31, 2020. The effects of Brexit depend in part on any agreements the United Kingdom makes to retain access to EU markets either during this transitional period or more permanently. Brexit could adversely affect European and worldwide economic and market conditions and could contribute to instability in global financial and foreign exchange markets, including volatility in the value of the Sterling and Euro. In addition, Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the United Kingdom determines which EU laws to replace or replicate. Furthermore, Brexit may lead other EU member countries to consider referendums regarding their EU membership. Any of these effects of Brexit, and others we cannot anticipate, could adversely affect our business, results of operations, financial condition and cash flows.

Risks Related to Intellectual Property and Other Legal Matters

If we are unable to protect our intellectual property, which entails significant expense and resources, then our financial condition, results of operations and the value of our technology and products could be adversely affected.

Much of our value arises out of our proprietary technology and intellectual property for the design, manufacture and use of medical imaging systems, including development of our TAEUS applications. We rely on patent, copyright, trade secret and trademark laws to protect our proprietary technology and limit the ability of others to compete with us using the same or similar technology. Third parties may infringe or misappropriate our intellectual property, which could harm our business.

We currently maintain a patent portfolio consisting of seven (7) patents issued in the United States, four (4) issued patents in foreign jurisdictions, twenty-four (24) patent applications pending in the United States and twenty-six (26) patent applications pending in foreign jurisdictions relating to our technology. These patents and patent applications cover certain innovations relating to contrast-enhanced imaging as well as several aspects of fat imaging and fat quantitation in the liver and other tissues. In addition, we have in-licensed license three (3) U.S. patents.

Expenses related to a patent portfolio include periodic maintenance fees, renewal fees, annuity fees, various other governmental fees on patents and/or applications due in several stages over the lifetime of patents and/or applications, as well as the cost associated with complying with numerous procedural provisions during the patent application process. We may or may not choose to pursue or maintain protection for particular inventions. In addition, there are situations in which a failure to make certain payments or noncompliance with certain requirements in the patent process can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction.

Policing unauthorized use of our proprietary rights can be difficult, expensive and time-consuming, and we might be unable to determine the extent of this unauthorized use

Policing unauthorized use of our intellectual property is difficult, costly and time-intensive. We may fail to stop or prevent misappropriation of our technology, particularly in countries where the laws may not protect our proprietary rights to the same extent as do the laws of the United States. Proceedings to enforce our patent and other intellectual property rights in non-U.S. jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business. If we cannot prevent other companies from using our proprietary technology or if our patents are found invalid or otherwise unenforceable, we may be unable to compete effectively against other manufacturers of ultrasound systems, which could decrease our market share. In addition, the breach of a patent licensing agreement by us may result in termination of a patent license.

We may not be able to prevent the unauthorized disclosure or use of our technical knowledge or other trade secrets by consultants, vendors or former or current employees, despite the existence generally of confidentiality agreements and other contractual restrictions. Monitoring unauthorized use and disclosure of our intellectual property is difficult, and we do not know whether the steps we have taken to protect our intellectual property will be adequate.

If we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology and products could be adversely affected.

In addition to our patent activities, we rely upon, among other things, unpatented proprietary technology, processes, trade secrets and know-how. Any involuntary disclosure to or misappropriation by third parties of our confidential or proprietary information could enable competitors to duplicate or surpass our technological achievements, potentially eroding our competitive position in our market. We seek to protect confidential or proprietary information in part by confidentiality agreements with our employees, consultants and third parties. While we require all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information and technology to enter into confidentiality agreements, we cannot be certain that this know-how, information and technology will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. These agreements may be terminated or breached, and we may not have adequate remedies for any such termination or breach. Furthermore, these agreements may not provide meaningful protection for our trade secrets and know-how in the event of unauthorized use or disclosure. To the extent that any of our staff was previously employed by other pharmaceutical, medical technology or biotechnology companies, those employers may allege violations of trade secrets and other similar claims in relation to their former employee's therapeutic development activities for us.

We may in the future be a party to intellectual property litigation or administrative proceedings that could be costly and could interfere with our ability to sell our TAEUS applications.

The medical device industry has been characterized by extensive litigation regarding patents, trademarks, trade secrets, and other intellectual property rights, and companies in the industry have used intellectual property litigation to gain a competitive advantage. It is possible that U.S. and foreign patents and pending patent applications or trademarks controlled by third parties may be alleged to cover our products, or that we may be accused of misappropriating third parties' trade secrets. Other medical imaging market participants, many of which have substantially greater resources and have made substantial investments in patent portfolios, trade secrets, trademarks, and competing technologies, may have applied for or obtained or may in the future apply for or obtain, patents or trademarks that will prevent, limit or otherwise interfere with our ability to make, use, sell and/or export our products or to use product names. We may become a party to patent or trademark infringement or trade secret claims and litigation as a result of these and other third party intellectual property rights being asserted against us. The defense and prosecution of these matters are both costly and time consuming. Vendors from whom we purchase hardware or software may not indemnify us in the event that such hardware or software is accused of infringing a third party's patent or trademark or of misappropriating a third party's trade secret.

Further, if such patents, trademarks, or trade secrets are successfully asserted against us, this may harm our business and result in injunctions preventing us from selling our products, license fees, damages and the payment of attorney fees and court costs. In addition, if we are found to willfully infringe third-party patents or trademarks or to have misappropriated trade secrets, we could be required to pay treble damages in addition to other penalties. Although patent, trademark, trade secret, and other intellectual property disputes in the medical device area have often been settled through licensing or similar arrangements, costs associated with such arrangements may be substantial and could include ongoing royalties. We may be unable to obtain necessary licenses on satisfactory terms, if at all. If we do not obtain necessary licenses, we may not be able to redesign our TAEUS applications to avoid infringement.

Similarly, interference or derivation proceedings provoked by third parties or brought by the U.S. Patent and Trademark Office (“USPTO”) may be necessary to determine the priority of inventions or other matters of inventorship with respect to our patents or patent applications. We may also become involved in other proceedings, such as re-examination, inter partes review, or opposition proceedings, before the USPTO or other jurisdictional body relating to our intellectual property rights or the intellectual property rights of others. Adverse determinations in a judicial or administrative proceeding or failure to obtain necessary licenses could prevent us from manufacturing and selling our TAEUS applications or using product names, which would have a significant adverse impact on our business.

Additionally, we may need to commence proceedings against others to enforce our patents or trademarks, to protect our trade secrets or know-how, or to determine the enforceability, scope and validity of the proprietary rights of others. These proceedings would result in substantial expense to us and significant diversion of effort by our technical and management personnel. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. We may not be able to stop a competitor from marketing and selling products that are the same or similar to our products or from using product names that are the same or similar to our product names, and our business may be harmed as a result.

Intellectual property rights may not provide adequate protection, which may permit third parties to compete against us more effectively.

In order to remain competitive, we must develop and maintain protection of the proprietary aspects of our technologies. We rely on a combination of patents, copyrights, trademarks, trade secret laws and confidentiality and invention assignment agreements to protect our intellectual property rights. Any patents issued to us may be challenged by third parties as being invalid, or third parties may independently develop similar or competing technology that avoids our patents. Should such challenges be successful, competitors might be able to market products and use manufacturing processes that are substantially similar to ours. Consequently, we may be unable to prevent our proprietary technology from being exploited abroad, which could affect our ability to expand to international markets or require costly efforts to protect our technology. To the extent our intellectual property protection is incomplete, we are exposed to a greater risk of direct competition. In addition, competitors could purchase our products and attempt to replicate some or all of the competitive advantages we derive from our development efforts or design around our protected technology. Our failure to secure, protect and enforce our intellectual property rights could substantially harm the value of our TAEUS platform, brand and business.

Risks Related to Government Regulation

Failure to comply with laws and regulations could harm our business.

Our business is or in the future may be subject to regulation by various federal, state, local and foreign governmental agencies, including agencies responsible for monitoring and enforcing employment and labor laws, workplace safety, environmental laws, consumer protection laws, anti-bribery laws, import/export controls, securities laws and tax laws and regulations. In certain jurisdictions, these regulatory requirements may be more stringent than those in the United States. Noncompliance with applicable regulations or requirements could subject us to investigations, sanctions, mandatory recalls, enforcement actions, adverse publicity, disgorgement of profits, fines, damages, civil and criminal penalties or injunctions and administrative actions. If any governmental sanctions, fines or penalties are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, operating results and financial condition could be harmed. In addition, responding to any action will likely result in a significant diversion of management's attention and our resources and substantial costs. Enforcement actions and sanctions could further harm our business, operating results and financial condition.

If we fail to obtain and maintain necessary regulatory clearances or approvals for our TAEUS applications, or if clearances or approvals for future applications and indications are delayed or not issued, our commercial operations will be harmed.

The medical devices that we manufacture and market will be subject to regulation by numerous worldwide regulatory bodies, including the EMA, FDA and other comparable regulatory agencies. Additionally, third parties designing, manufacturing or conducting human studies of our devices will be subject to local regulations, such as those of Health Canada. These agencies and regulations require manufacturers of medical devices to comply with applicable laws and regulations governing development, testing, manufacturing, labeling, marketing and distribution of medical devices. Devices are generally subject to varying levels of regulatory control, based on the risk level of the device. Governmental regulations specific to medical devices are wide-ranging and govern, among other things:

- product design, development and manufacture;
- laboratory, pre-clinical and clinical testing, labeling, packaging storage and distribution;
- premarketing clearance or approval;
- record keeping;
- product marketing, promotion and advertising, sales and distribution; and
- post-marketing surveillance, including reporting of deaths or serious injuries and recalls and correction and removals.

The European Union has revised its regulatory system for medical devices by implementing regulation (EU) 2017/745 on medical devices (“Medical Device Regulation” or “MDR”) and regulation (EU) 2017/746 on in vitro diagnostic medical devices. The MDR will apply as from 26 May 2020 (the “Date of Application” or “DoA”), though given recent developments in connection with COVID-19, the European commission has proposed postponing the DoA by one year. The details of such proposal are not yet published and we do not yet know whether there may be additional changes to the MDR at this stage. The changes to the regulatory system implemented by the MDR include stricter requirements for clinical evidence and pre-market assessment of safety and performance, new classifications to indicate risk levels, requirements for third party testing by Notified Bodies, tightened and streamlined quality management system assessment procedures and additional requirements for the quality management system, additional requirements for traceability of products and transparency as well a refined responsibility of economic operators.

We are currently in a transitional period, where our products will be required to comply with applicable medical device directives (including the Medical Devices Directive and the Active Implantable Medical Devices Directive) and, as of the DoA, with the Medical Device Regulation and to obtain CE mark certification in order to market medical devices. The CE mark is applied following approval from an independent notified body or declaration of conformity. It is an international symbol of adherence to quality assurance standards and compliance with applicable European Medical Devices Directives or the MDR, as the case may be. CE mark approvals issued prior to the DoA will remain in place and such products may be made available for a transitional period. Subsequent to the period ending December 31, 2019 we received CE mark approval for our TAEUS FLIP (Fatty Liver Imaging Probe) System. The CE marking indicates that TAEUS FLIP System complies with all applicable European Directives and Regulations in the European Union, including the MDR, and other CE mark geographies, including the 27 EU member states. We believe that future TAEUS applications will qualify for sale in the European Union as Class IIa medical devices. Although existing regulations do not require clinical trials to obtain CE marks for Class IIa medical devices, the MDR requires a clinical evaluation for all medical devices and clinical trials for selected medical devices. Depending on the classification of our applications, future CE mark certifications or recertification of our applications may require additional clinical evaluations or trials, as the case may be.

We are also required to comply with the regulations of each other country where we commercialize products, such as the requirement that we obtain approval from the FDA and the China Food and Drug Administration before we can launch new products in the United States and China, respectively.

International sales of medical devices manufactured in the United States that are not approved by the FDA for use in the United States, or that are banned or deviate from lawful performance standards, are subject to FDA export requirements. Exported devices are subject to the regulatory requirements of each country to which the device is exported. Frequently, regulatory approval may first be obtained in a foreign country prior to application in the United States due to differing regulatory requirements; however, other countries, such as China for example, require approval in the country of origin first.

Before a new medical device or a new intended use for an existing product can be marketed in the United States, a company must first submit and receive either 510(k) clearance or premarketing approval, or PMA, from the FDA, unless an exemption applies. The typical duration to receive a 510(k) approval is approximately nine to twelve months from the date of the initial 510(k) submission and the typical duration to receive a PMA approval is approximately two years from the date of submission of the initial PMA application, although there is no guarantee that the timing will not be longer.

We expect all of our products to be classified as Class II medical devices that may be approved by means of a 510(k) clearance. In the past, the 510(k) pathway for product marketing has required only proof of substantial equivalence in technology for a given indication with a previously cleared device. Recently, there has been a trend of the FDA requiring additional clinical work to prove efficacy in addition to technological equivalence and basic safety. Whether clinical data is provided or not, the FDA may decide to reject the substantial equivalence argument we present. If that happens, the device is automatically designated as a Class III device. The device sponsor must then fulfill more rigorous PMA requirements, or can request a risk-based classification determination for the device in accordance with the “de novo” process, which may determine that the new device is of low to moderate risk and that it can be appropriately regulated as a Class I or II device. Thus, although at this time we do not anticipate that we will be required to do so, it is possible that one or more of our other products may require approval through the 510(k) de novo process or by means of a PMA.

We may not be able to obtain the necessary clearances or approvals or may be unduly delayed in doing so, which could harm our business. Furthermore, even if we are granted regulatory clearances or approvals, they may include significant limitations on the indicated uses for the product, which may limit the market for the product. Therefore, even if we believe we have successfully developed our TAEUS technology, we may not be permitted to market TAEUS applications in the United States if we do not obtain FDA regulatory clearance to market such applications. Delays in obtaining clearance or approval could increase our costs and harm our revenues and growth.

In addition, we are required to timely file various reports with the FDA, including reports required by the medical device reporting regulations that require us to report to certain regulatory authorities if our devices may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction were to recur. If these reports are not filed timely, regulators may impose sanctions and sales of our products may suffer, and we may be subject to product liability or regulatory enforcement actions, all of which could harm our business.

If we initiate a correction or removal for one of our devices to reduce a risk to health posed by the device, we would be required to submit a publicly available Correction and Removal report to the FDA and, in many cases, similar reports to other regulatory agencies. This report could be classified by the FDA as a device recall which could lead to increased scrutiny by the FDA, other international regulatory agencies and our customers regarding the quality and safety of our devices. Furthermore, the submission of these reports has been and could be used by competitors against us in competitive situations and cause customers to delay purchase decisions or cancel orders and would harm our reputation.

The FDA and the Federal Trade Commission (the “FTC”) also regulate the advertising and promotion of our planned products to ensure that the claims we make are consistent with our regulatory clearances, that there are adequate and reasonable data to substantiate the claims and that our promotional labeling and advertising is neither false nor misleading in any respect. If the FDA or FTC determines that any of our advertising or promotional claims are misleading, not substantiated or not permissible, we may be subject to enforcement actions, including warning letters, and we may be required to revise our promotional claims and make other corrections or restitutions.

The FDA and state authorities have broad enforcement powers. Our failure to comply with applicable regulatory requirements could result in enforcement action by the FDA or state agencies, which may include any of the following sanctions:

- adverse publicity, warning letters, fines, injunctions, consent decrees and civil penalties;
- repair, replacement, refunds, recall or seizure of our products;
- operating restrictions, partial suspension or total shutdown of production;
- refusing our requests for 510(k) clearance or premarket approval of new products, new intended uses or modifications to existing products;
- withdrawing 510(k) clearance or premarket approvals that have already been granted; and
- criminal prosecution.

If any of these events were to occur, our business and financial condition would be harmed.

Our TAEUS applications may require recertification or new regulatory clearances or premarket approvals and we may be required to recall or cease marketing our TAEUS applications until such recertification or clearances are obtained.

Most countries outside of the United States require that product approvals be recertified on a regular basis, generally every five years. The recertification process requires that we evaluate any device changes and any new regulations or standards relevant to the device and, where needed, conduct appropriate testing to document continued compliance. Where recertification applications are required, they must be approved in order to continue selling our products in those countries.

In the United States, material modifications to the intended use or technological characteristics of our TAEUS applications will require new 510(k) clearances or premarket approvals or require us to recall or cease marketing the modified devices until these clearances or approvals are obtained. Based on FDA published guidelines, the FDA requires device manufacturers to initially make and document a determination of whether or not a modification requires a new approval, supplement or clearance; however, the FDA can review a manufacturer's decision. Any modification to an FDA-cleared device that would significantly affect its safety or efficacy or that would constitute a major change in its intended use would require a new 510(k) clearance or possibly a premarket approval.

We may not be able to obtain recertification or additional 510(k) clearances or premarket approvals for our applications or for modifications to, or additional indications for, our TAEUS technology in a timely fashion, or at all. Delays in obtaining required future governmental approvals would harm our ability to introduce new or enhanced products in a timely manner, which in turn would harm our future growth. If foreign regulatory authorities or the FDA require additional approvals, we may be required to recall and to stop selling or marketing our TAEUS applications, which could harm our operating results and require us to redesign our applications. In these circumstances, we may be subject to significant enforcement actions.

If any OEMs fail to comply with the FDA's Quality System Regulations or other regulatory bodies' equivalent regulations, manufacturing operations could be delayed or shut down and the development of our TAEUS platform could suffer.

The manufacturing processes of OEMs are required to comply with the FDA's Quality System Regulations and other regulatory bodies' equivalent regulations, which cover the procedures and documentation of the design, testing, production, control, quality assurance, labeling, packaging, storage and shipping of our TAEUS applications. They may also be subject to similar state requirements and licenses and engage in extensive recordkeeping and reporting and make available their manufacturing facilities and records for periodic unannounced inspections by governmental agencies, including the FDA, state authorities and comparable agencies in other countries. If any OEM fails such an inspection, our operations could be disrupted and our manufacturing interrupted. Failure to take adequate corrective action in response to an adverse inspection could result in, among other things, a shut-down of our manufacturing operations, significant fines, suspension of marketing clearances and approvals, seizures or recalls of our products, operating restrictions and criminal prosecutions, any of which would cause our business to suffer. Furthermore, these OEMs may be engaged with other companies to supply and/or manufacture materials or products for such companies, which would expose our OEMs to regulatory risks for the production of such materials and products. As a result, failure to meet the regulatory requirements for the production of those materials and products may also affect the regulatory clearance of a third-party manufacturers' facility. If the FDA or a foreign regulatory agency does not approve these facilities for the manufacture of our products, or if it withdraws its approval in the future, we may need to find alternative manufacturing facilities, which would impede or delay our ability to develop, obtain regulatory approval for or market our products, if approved. Additionally, our key component suppliers may not currently be or may not continue to be in compliance with applicable regulatory requirements, which may result in manufacturing delays for our product and cause our results of operations to suffer.

Our TAEUS applications may in the future be subject to product recalls that could harm our reputation.

Governmental authorities in Europe, the United States and China have the authority to require the recall of commercialized products in the event of material regulatory deficiencies or defects in design or manufacture. A government-mandated or voluntary recall by us could occur as a result of component failures, manufacturing errors or design or labeling defects. Recalls of our TAEUS applications would divert managerial attention, be expensive, harm our reputation with customers and harm our financial condition and results of operations. A recall announcement would negatively affect the price of our securities.

Healthcare reform measures could hinder or prevent our planned products' commercial success.

There have been, and we expect there will continue to be, a number of legislative and regulatory changes to the healthcare system in ways that could harm our future revenues and profitability and the future revenues and profitability of our potential customers. In the EU, the Medical Devices Directive is being replaced with the more expansive Medical Devices Regulation, which may increase the costs of obtaining and maintaining required regulatory approvals for our products. We cannot predict what other healthcare initiatives, if any, will be implemented by EU member countries, or the effect any future legislation or regulation will have on us.

In the United States, federal and state lawmakers regularly propose and, at times, enact legislation that would result in significant changes to the healthcare system, some of which are intended to contain or reduce the costs of medical products and services. For example, one of the most significant healthcare reform measures in decades, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (the "Affordable Care Act"), was enacted in 2010. The Affordable Care Act contains a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement changes and fraud and abuse measures, all of which will impact existing government healthcare programs and will result in the development of new programs. The Affordable Care Act, among other things, imposes an excise tax of 2.3% on the sale of most medical devices, including ours, and any failure to pay this amount could result in the imposition of an injunction on the sale of our products, fines and penalties.

It remains unclear whether changes will be made to the Affordable Care Act, or whether it will be repealed or materially modified. For example, the Tax Cuts and Jobs Act of 2017 modified certain aspects of the Affordable Care Act and the Trump Administration and U.S. Congress may take further action regarding the ACA. Therefore, we cannot assure you that the Affordable Care Act, as currently enacted or as may be further amended or discontinued in the future, will not harm our business and financial results and we cannot predict how future federal or state legislative or administrative changes relating to healthcare reform will affect our business.

There likely will continue to be legislative and regulatory proposals at the federal and state levels directed at containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future or their full impact. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare may harm:

- our ability to set a price that we believe is fair for our products;
- our ability to generate revenues and achieve or maintain profitability; and
- the availability of capital.

If we fail to comply with healthcare regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.

Even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third party payors, certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. We could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business. Other jurisdictions such as the European Union have similar laws. The regulations that will affect how we operate include:

- the federal healthcare program Anti-Kickback Statute, which prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs, such as the Medicare and Medicaid programs;
- the federal False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false claims, or knowingly using false statements, to obtain payment from the federal government;
- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- the federal Physician Payment Sunshine Act, created under the Affordable Care Act, and its implementing regulations, which require manufacturers of drugs, medical devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to the U.S. Department of Health and Human Services, or HHS, information related to payments or other transfers of value made to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, which governs the conduct of certain electronic healthcare transactions and protects the security and privacy of protected health information; and

- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers.

The Affordable Care Act, among other things, amends the intent requirement of the Federal Anti-Kickback Statute and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the Affordable Care Act provides that the government may assert that a claim including items or services resulting from a violation of the Federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

Efforts to ensure that our business arrangements will comply with applicable healthcare laws may involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, disgorgement, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal and similar foreign healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could harm our ability to operate our business and our results of operations.

Compliance with environmental laws and regulations could be expensive. Failure to comply with environmental laws and regulations could subject us to significant liability.

Our research and development and manufacturing operations may involve the use of hazardous substances and are subject to a variety of federal, state, local and foreign environmental laws and regulations relating to the storage, use, discharge, disposal, remediation of, and human exposure to, hazardous substances and the sale, labeling, collection, recycling, treatment and disposal of products containing hazardous substances. In addition, our research and development and manufacturing operations produce biological waste materials, such as human and animal tissue, and waste solvents, such as isopropyl alcohol. These operations are permitted by regulatory authorities, and the resultant waste materials are disposed of in material compliance with environmental laws and regulations. Liability under environmental laws and regulations can be joint and several and without regard to fault or negligence. Compliance with environmental laws and regulations may be expensive and non-compliance could result in substantial liabilities, fines and penalties, personal injury and third party property damage claims and substantial investigation and remediation costs. Environmental laws and regulations could become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with violations. We cannot assure you that violations of these laws and regulations will not occur in the future or have not occurred in the past as a result of human error, accidents, equipment failure or other causes. The expense associated with environmental regulation and remediation could harm our financial condition and operating results.

Risks Related to Owning Our Securities, Our Financial Results and Our Need for Financing

Our quarterly and annual results may fluctuate significantly, may not fully reflect the underlying performance of our business and may result in volatility in the price of our securities.

Our operating results will be affected by numerous factors such as:

- variations in the level of expenses related to our proposed products;
- status of our product development efforts;
- execution of collaborative, licensing or other arrangements, and the timing of payments received or made under those arrangements;
- intellectual property prosecution and any infringement lawsuits to which we may become a party;
- regulatory developments affecting our products or those of our competitors, including the timing and success of obtaining various regulatory approvals for our products' testing, production and marketing;

- our ability to obtain and maintain FDA clearance and approval from foreign regulatory authorities for our products, which have not yet been approved for marketing;
- market acceptance of our TAEUS applications;
- the availability of reimbursement for our TAEUS applications;
- our ability to attract new customers and grow our business with existing customers;
- the timing and success of new product and feature introductions by us or our competitors or any other change in the competitive dynamics of our industry, including consolidation among competitors, customers or strategic partners;
- the amount and timing of costs and expenses related to the maintenance and expansion of our business and operations;
- changes in our pricing policies or those of our competitors;
- general economic, industry and market conditions;
- the hiring, training and retention of key employees, including our ability to expand our sales team;
- litigation or other claims against us;
- our ability to obtain additional financing; and
- advances and trends in new technologies and industry standards.

Any or all of these factors could adversely affect our cash position requiring us to raise additional capital which may be on unfavorable terms and result in substantial dilution. Additionally, the risks surrounding our business, as well as the limited market for our common stock, have resulted, and will likely continue to result, in volatility in the price of our common stock and warrants. From January 1, 2019 through December 31, 2019, intra-day trading prices on the Nasdaq Capital Market have fluctuated from a low of \$0.62 to a high of \$3.49 with respect to shares of our common stock, and from a low of \$0.14 to a high of \$1.20 with respect to our warrants, and may continue to fluctuate significantly in the future.

We may be subject to securities litigation, which is expensive and could divert management attention.

In the past, companies that have experienced volatility in the market price of their securities have been subject to an increased incidence of securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

There is a limited market for our common stock.

Although our common stock is traded on the Nasdaq Capital Market, the volume of trading has historically been limited. Our average daily trading volume of our shares from January 1, 2019 to December 31, 2019 was approximately 167,251 shares. Thinly traded stock can be more volatile than stock trading in a more active public market. While we have made efforts to increase trading in our stock, we cannot predict the extent to which an active public market for our common stock will develop or be sustained. Therefore, a holder of our common stock who wishes to sell his or her shares may not be able to do so immediately or at an acceptable price.

If securities or industry analysts do not publish research reports about our business, or if they issue an adverse opinion about our business, the price of our securities and trading volume could decline.

The trading market for our securities is influenced by the research and reports that industry or securities analysts publish about us or our business. We do not currently have and may never obtain research coverage by securities and industry analysts. If no or few analysts commence research coverage of us, or one or more of the analysts who cover us issues an adverse opinion about our company, the price of our securities would likely decline. If one or more of these analysts ceases research coverage of us or fails to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause the price of our securities or trading volume to decline.

If we are unable to implement and maintain effective internal control over financial reporting, including by remediating current material weaknesses in our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our securities may decrease.

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal controls. Section 404 of the Sarbanes-Oxley Act of 2002 (the “Sarbanes-Oxley Act”) requires that we evaluate and determine the effectiveness of our internal control over financial reporting and provide a management report on our internal control over financial reporting.

Currently, we have material weaknesses in our internal control over financial reporting and, as a result, we may not detect errors on a timely basis and our financial statements may be materially misstated. Specifically, we have insufficient personnel resources within the accounting function to segregate the duties over financial transaction processing and reporting. We are in the process of improving our internal control over financial reporting, which process is time-consuming, costly and complicated and could limit our ability to maintain effective internal controls over financial reporting.

Until such time as we are no longer an “emerging growth company” or a smaller reporting company, our auditors will not be required to attest as to our internal control over financial reporting. If we continue to identify material weaknesses in our internal control over financial reporting, if we are unable to comply with the requirements of Section 404 in a timely manner, if we are unable to assert that our internal control over financial reporting is effective or, if required, if our independent registered public accounting firm is unable to attest that our internal control over financial reporting is effective, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock could decrease. We could also become subject to stockholder or other third-party litigation as well as investigations by the stock exchange on which our securities are listed, the Securities and Exchange Commission (the “SEC”) or other regulatory authorities, which could require additional financial and management resources and could result in fines, trading suspensions or other remedies.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We are subject to the periodic reporting requirements of the Exchange Act. Our disclosure controls and procedures are designed to reasonably assure that information required to be disclosed by us in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified by the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

We are an “emerging growth company” under the JOBS Act and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our securities less attractive to investors.

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”), and we may take advantage of certain exemptions from various reporting requirements applicable to other public companies that are not “emerging growth companies” including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We cannot predict if investors will find our securities less attractive because we may rely on these exemptions. If some investors find our securities less attractive as a result, there may be a less active trading market for our securities and the price of our securities may be more volatile.

We will remain an “emerging growth company” until December 31, 2022, the end of the fiscal year following the fifth anniversary of the date of our May 2017 initial public offering, although we will lose that status sooner if our annual revenues exceed \$1.07 billion, if we issue more than \$1 billion in non-convertible debt in a three year period, or if the market value of our common stock that is held by non-affiliates exceeds \$700 million as of any June 30.

We have not paid dividends in the past and have no immediate plans to pay dividends.

We plan to reinvest all of our earnings, to the extent we have earnings, in order to further develop our technology and potential products and to cover operating costs. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we will, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend.

We incur significant costs as a result of being a public company that reports to the SEC and our management is required to devote substantial time to meet compliance obligations.

As a public company listed in the United States, we incur significant legal, accounting and other expenses relating to our compliance obligations. We are subject to reporting requirements of the Exchange Act and the Sarbanes-Oxley Act, as well as rules subsequently implemented by the SEC and Nasdaq that impose significant requirements on public companies, including requiring the establishment and maintenance of effective disclosure and financial controls and corporate governance practices. In addition, there are significant corporate governance and executive compensation-related provisions in the Dodd-Frank Act Wall Street Reform and Protection Act that contribute to our legal and financial compliance costs, make some activities more difficult, time-consuming or costly and also place undue strain on our personnel, systems and resources. Our management and other personnel need to devote a substantial amount of time to these compliance initiatives. Furthermore, these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees or as executive officers.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plan, could result in dilution of the percentage ownership of our stockholders and could cause the price of our securities to fall.

We expect that significant capital will be needed in the future to continue our planned operations. To the extent we raise capital by issuing common stock, convertible securities or other equity securities, our stockholders may experience substantial dilution, and new investors could gain rights superior to our existing stockholders.

Our charter documents and Delaware law may inhibit a takeover that stockholders consider favorable.

Certain provisions of our Fourth Amended and Restated Certificate of Incorporation (our "Certificate of Incorporation") and Amended and Restated Bylaws (our "Bylaws") and applicable provisions of Delaware law may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. The provisions in our Certificate of Incorporation and Bylaws:

- authorize our board of directors to issue preferred stock without stockholder approval and to designate the rights, preferences and privileges of each class; if issued, such preferred stock would increase the number of outstanding shares of our capital stock and could include terms that may deter an acquisition of us;
- limit who may call stockholder meetings;
- do not provide for cumulative voting rights;
- provide that all vacancies in our board of directors may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- provide that stockholders must comply with advance notice procedures with respect to stockholder proposals and the nomination of candidates for director;
- provide that stockholders may only amend our Certificate of Incorporation upon a supermajority vote of stockholders; and
- provide that the Court of Chancery of the State of Delaware will be the exclusive forum for certain legal claims.

In addition, section 203 of the Delaware General Corporation Law limits our ability to engage in any business combination with a person who beneficially owns 15% or more of our outstanding voting stock unless certain conditions are satisfied. This restriction lasts for a period of three years following any such person's share acquisition. These provisions may have the effect of entrenching our management team and may deprive stockholders of the opportunity to sell their shares to potential acquirers at a premium over prevailing prices. This potential inability to obtain a control premium could reduce the price of our common stock.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties

Our principal office is located at 3600 Green Court, Suite 350, Ann Arbor, Michigan 48105-1570. We currently lease approximately 3,950 square feet of office and light industrial/research space under a lease that is due to expire in 2024. The rent is approximately \$7,992 per month, subject to moderate annual increases.

We also maintain an office in London, Ontario, Canada under a lease that is terminable by either party with 60 days' written notice. The rent is approximately \$900 per month per the agreement with the landlord, subject to moderate annual increases at the discretion of the landlord.

We believe that, with respect to both of our facilities, equivalent suitable space is available at similar rents.

Item 3. Legal Proceedings

We are not currently a party to any pending legal proceedings that we believe will have a material adverse effect on our business or financial conditions. We may, however, be subject to various claims and legal actions arising in the ordinary course of business from time to time.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock and our warrants issued in our initial public offering have been listed on the Nasdaq Capital Market under the symbols "NDRA" and "NDRAW," respectively, since June 28, 2017 upon the separation of units sold in our initial public offering. Prior to that date, our common stock and such warrants traded together as units beginning on May 9, 2017. Each of our publicly traded warrants is exercisable for a share of our common stock at a price of \$6.25 per share and expires on May 12, 2022.

As of March 26, 2020, there were 32 holders of record of our common stock and one holder of record of our publicly traded warrants.

Dividend Policy

We have never paid cash dividends on our securities and we do not anticipate paying any cash dividends on our shares of common stock in the foreseeable future. We intend to retain any future earnings for reinvestment in our business. Any future determination to pay cash dividends will be at the discretion of our board of directors, and will be dependent upon our financial condition, results of operations, capital requirements and such other factors as our board of directors deems relevant.

Item 6. Selected Financial Data

Not required for smaller reporting companies.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion of our financial condition and results of operations should be read in conjunction with the financial statements and the related notes thereto included elsewhere in this Annual Report. This discussion and analysis contain forward-looking statements that are based on our management's current beliefs and assumptions, which statements are subject to substantial risks and uncertainties. Our actual results may differ materially from those expressed or implied by these forward-looking statements as a result of many factors, including those discussed in "Risk Factors" in Item 1A of this Annual Report. Please also see "Cautionary Note Regarding Forward Looking Statements" at the beginning of this Annual Report.

Overview

We are leveraging experience with pre-clinical enhanced ultrasound devices to develop technology for increasing the capabilities of clinical diagnostic ultrasound, to broaden patient access to the safe diagnosis and treatment of a number of significant medical conditions in circumstances where expensive X-ray computed tomography ("CT") and magnetic resonance imaging ("MRI") technology is unavailable or impractical.

In 2010, we began marketing and selling our Nexus 128 system, which combined light-based thermoacoustics and ultrasound to address the imaging needs of researchers studying disease models in pre-clinical applications. Building on this expertise in thermoacoustics, we have developed a next-generation technology platform — Thermo Acoustic Enhanced Ultrasound, or TAEUS — which is intended to enhance the capability of clinical ultrasound technology and support the diagnosis and treatment of a number of significant medical conditions that currently require the use of expensive CT or MRI imaging or where imaging is not practical using existing technology. We ceased production of our Nexus 128 system as of January 1, 2019 and stopped providing service support and parts for all existing Nexus 128 systems as of July 1, 2019 in order to focus our resources on the development of our TAEUS technology.

Unlike the near-infrared light pulses used in our legacy Nexus 128 system, our TAEUS technology uses radio frequency ("RF") pulses to stimulate tissues, using a small fraction of the energy that would be transmitted into the body during an MRI scan. The use of RF energy allows our TAEUS technology to penetrate deep into tissue, enabling the imaging of human anatomy at depths equivalent to those of conventional ultrasound. The RF pulses are absorbed by tissue and converted into ultrasound signals, which are detected by an external ultrasound receiver and a digital acquisition system that is part of the TAEUS system. The detected ultrasound is processed into images using our proprietary algorithms and displayed to complement conventional gray-scale ultrasound images.

We expect that the first-generation TAEUS application will be a standalone ultrasound accessory designed to cost-effectively quantify fat in the liver and stage progression of nonalcoholic fatty liver disease (“NAFLD”), which can only be achieved today with impractical surgical biopsies or MRI scans. Subsequent TAEUS offerings are expected to be implemented via a second generation hardware platform that can run multiple clinical software applications that we will offer TAEUS users for a one-time licensing fee – adding ongoing customer value to the TAEUS platform and a growing software revenue stream for our Company.

In April 2016, we entered into a Collaborative Research Agreement with General Electric Company, acting through its GE Healthcare business unit and the GE Global Research Center (collectively, “GE Healthcare”). Under the terms of the agreement, GE Healthcare has agreed to assist us in our efforts to commercialize our TAEUS technology for use in a fatty liver application by, among other things, providing equipment and technical advice, and facilitating introductions to GE Healthcare clinical ultrasound customers. In return for this assistance, we have agreed to afford GE Healthcare certain rights of first offer with respect to manufacturing and licensing rights for the target application.

In November 2017, we engaged two firms that specialize in medical device software development to commence productization of our TAEUS device targeting NAFLD. The agreements call for these vendors to provide us with the specialized engineering resources necessary to translate our current prototype TAEUS device into a clinical product that meets CE regulatory requirements required for commercial launch in the European Union followed by FDA submission for the U.S. market.

Each of our TAEUS platform applications will require regulatory approvals before we are able to sell or license the application. Based on certain factors, such as the installed base of ultrasound systems, availability of other imaging technologies, such as CT and MRI, economic strength and applicable regulatory requirements, we intend to seek initial approval of our applications for sale in the European Union and the United States, followed by China.

On March 9, 2020, we announced that we received Conformité Européene (“CE”) mark approval for our TAEUS FLIP (Fatty Liver Imaging Probe) System. The CE marking indicates that TAEUS FLIP System complies with all applicable European Directives and Regulations in the European Union and other CE mark geographies, including the 27 EU member states. We next intend to submit to the FDA an application for approval of the TAEUS FLIP.

Financial Operations Overview

Revenue

To date our revenue has been generated by the placement and sale of our discontinued Nexus 128 thermoacoustic imaging systems for use in pre-clinical applications, and related service revenue. No revenue has been generated by our TAEUS technology, which we have not yet commercially sold.

Cost of Goods Sold

Our cost of goods sold is related to our direct costs associated with the development and shipment of our discontinued Nexus 128 systems placed in pre-clinical settings, and costs associated with service provided for these systems. No cost of goods sold has been generated by our TAEUS technology, which we have not yet commercially sold.

Research and Development Expenses

Our research and development expenses primarily include wages, fees and equipment for the development of our TAEUS technology platform and the proposed applications. Additionally, we incur certain costs associated with the protection of our products and inventions through a combination of patents, licenses, applications and disclosures.

Sales and Marketing Expenses

Sales and marketing expenses consist primarily of headcount and consulting costs, and marketing and tradeshow expenses. Currently, our marketing efforts are through our website and attendance of key industry meetings and conferences. In connection with the commercialization of our TAEUS applications, we expect to build a small sales and marketing team to train and support global ultrasound distributors, as well as execute traditional marketing activities such as promotional materials, electronic media and participation in industry events and conferences.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and related expenses for our management and personnel, and professional fees, such as accounting, consulting and legal.

Critical Accounting Policies and Estimates

Use of Estimates

The preparation of the financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosure of contingent liabilities at the date of the financial statements and the reported amounts of expenses during the reporting period. Actual results could differ from those estimates.

Management makes estimates that affect certain accounts including deferred income tax assets, accrued expenses, fair value of equity instruments and reserves for any other commitments or contingencies. Any adjustments applied to estimates are recognized in the period in which such adjustments are determined.

Share-based Compensation

Our 2016 Omnibus Incentive Plan (the "Omnibus Plan") permits the grant of share options and shares to our employees, consultants and non-employee members of our board of directors. Each January 1 the pool of shares available for issuance under the Omnibus Plan automatically increases by an amount equal to the lesser of (i) the number of shares necessary such that the aggregate number of shares available under the Omnibus Plan equals 25% of the number of fully-diluted outstanding shares on the increase date (assuming the conversion of all outstanding shares of preferred stock and other outstanding convertible securities and exercise of all outstanding options and warrants to purchase shares) and (ii) if the board of directors takes action to set a lower amount, the amount determined by the board. On January 1, 2020, the pool of shares available for issuance under the Omnibus Plan automatically increased by 3,202,280 shares from 2,649,378 shares to 5,861,658.

We record share-based compensation in accordance with the provisions of the Share-based Compensation Topic of the FASB Codification. The guidance requires the use of option-pricing models that require the input of highly subjective assumptions, including the option's expected life and the price volatility of the underlying stock. The fair value of each option grant is estimated on the date of grant using the Black-Scholes option valuation model which uses certain assumptions related to risk-free interest rates, expected volatility, expected life of the common stock options, and future dividends, and the resulting charge is expensed using the straight-line attribution method over the vesting period.

Stock compensation expense recognized during the period is based on the value of share-based awards that were expected to vest during the period adjusted for estimated forfeitures. The estimated fair value of grants of stock options and warrants to non-employees is charged to expense, if applicable, in the financial statements.

Debt Discount and Detachable Debt-Related Warrants

The Company accounts for debt discounts originating in connection with conversion features that are embedded in the notes related warrants in accordance with ASC Subtopic 470-20, *Debt with Conversion and Other Options*. These costs are classified on the consolidated balance sheet as a direct deduction from the debt liability. The Company amortizes these costs over the term of the securities as interest expense-debt discount in the consolidated statement of operations. Debt discounts relate to the relative fair value of warrants issued in conjunction with the debt and are also recorded as a reduction to the debt balance and accreted over the expected term of the securities to interest expense.

Recent Accounting Pronouncements

See Note 2 of the accompanying financial statements for a discussion of recently issued accounting standards.

Results of Operations

Years Ended December 31, 2019 and 2018

Revenue

We had no revenue during the year ended December 31, 2019, as compared to \$6,174 for the year ended December 31, 2018. The 2018 revenue was a result of service activity on our installed base of Nexus 128 pre-clinical systems. During the year ended December 31, 2019, we ceased production of our Nexus 128 system and stopped providing service support and parts for all existing systems as of July 1, 2019, in order to focus our resources on the development of our TAEUS technology.

Cost of Goods Sold

There was no cost of goods sold for each of the years ended December 31, 2019 and 2018.

Research and Development

Research and development expenses were \$6,574,999 for the year ended December 31, 2019, as compared to \$4,722,465 for the year ended December 31, 2018, an increase of \$1,852,534, or 39%. The costs include primarily wages, fees and equipment for the development of our TAEUS product line. Research and development expenses increased from the same period for the prior year due primarily to increased spending to develop TAEUS applications, which included expenses for our contracted development vendors.

Sales and Marketing

Sales and marketing expenses were \$412,434 for the year ended December 31, 2019, as compared to \$262,641 for the year ended December 31, 2018, an increase of \$149,793, or 57%. The increase was primarily due to additional headcount and pre-selling activities for our TAEUS product line. Currently, our marketing efforts are through our website and attendance of key industry meetings. We expect that our future clinical business will involve hiring and training additional staff to support our sales efforts. As we seek to complete the development and commercialization of our TAEUS applications, we intend to build a small sales and marketing team to train and support global ultrasound distributors, as well as execute traditional marketing activities such as promotional materials, electronic media and participation in industry conferences.

General and Administrative

Our general and administrative expenses for the year ended December 31, 2019 were \$3,856,159, compared to \$3,752,535 for the year ended December 31, 2018, an increase of \$103,624, or 3%. Our wage and related expenses for the year ended December 31, 2019 were \$1,892,455, compared to \$1,607,568 for the year ended December 31, 2018. Wage and related expenses in the year ended December 31, 2019 included \$147,915 for bonuses and \$720,030 of stock compensation expense related to the issuance and vesting of options, compared to \$264,200 for bonuses, \$617,250 of stock compensation expense related to the issuance and vesting of options for the same period in 2018. Our professional fees which include legal, audit, and investor relations for the year ended December 31, 2019 were \$1,436,734, compared to \$1,612,076 for the year ended December 31, 2018.

Impairment of Inventory

During the year ended December 31, 2018, we had a one-time write down of inventory available for our Nexus 128 product of \$287,541. There was no such expense during the year ended December 31, 2019.

Impairment of Receivable

During the year ended December 31, 2019, we incurred an expense of \$249,256 related to the return of taxes paid to the Canada Revenue Agency which we had previously accounted for as an other current asset. There was no such expense during the year ended December 31, 2018.

Amortization of Debt Discount

During the year ended December 31, 2019, we incurred non-cash expenses of \$2,355,469 related to the amortization of debt discount incurred as result of our issuance of the convertible note and warrants in July 2019. During the year ended December 31, 2018, we incurred non-cash expenses of \$729,241 related to the amortization of debt discount incurred as result of our issuance of the convertible note and warrants in June 2018.

Net Loss

As a result of the foregoing, for the year ended December 31, 2019, we recorded a net loss of \$13,305,964, compared to a net loss of \$9,796,261 for the year ended December 31, 2018.

Liquidity and Capital Resources

To date we have funded our operations through private and public sales of our securities. As of December 31, 2019, we had \$6,174,207 in cash. We have completed the following:

- In May 2017, we completed our initial public offering, raising net proceeds of approximately \$8.6 million after deducting approximately \$0.8 million in underwriting discounts, commissions and expenses and approximately \$0.3 million in offering expenses payable by us.
- In June 2018, we completed the placement of senior secured convertible promissory notes and warrants, raising net proceeds of approximately \$935,000 after deducting offering expenses of approximately \$142,000 payable by us.
- In October 2018, we completed an underwritten public offering of 1,477,750 shares of our common stock. The net proceeds from this offering were approximately \$2.7 million, after deducting underwriting discounts and commissions and other offering expenses.
- In November 2018, we completed an underwritten public offering of 1,385,750 shares of our common stock. The net proceeds from this offering were approximately \$4.9 million, after deducting underwriting discounts and commissions and other offering expenses. In connection with this and the October 2018 underwritten public offering, the promissory notes issued in June 2018 automatically converted into common stock pursuant to their terms.
- In July 2019, we completed a private placement of senior secured convertible promissory notes and warrants, raising net proceeds of approximately \$2.5 million after deducting offering expenses of approximately \$314,500 payable by us. The promissory notes bear interest at a rate of 10% per annum until maturity on April 26, 2020.
- In December 2019, we completed placements of shares of Series A Preferred Stock, shares of Series B Preferred Stock, shares of common stock and warrants, raising net proceeds of approximately \$5.8 million after using approximately \$1.9 million to repay debt represented by convertible promissory notes and deducting offering expenses of approximately \$766,000 payable by us.

We believe that cash on hand at December 31, 2019 will be sufficient to fund our current operations into the third quarter of 2020. However, we will need additional capital to execute our commercialization plan and if we do not raise additional capital in the next several months we will need to significantly slow or pause our business activities until such time as we are able to raise additional capital. We continue to evaluate and manage our capital needs to support our clinical, regulatory and operational activities and prepare for the results of our human studies data and EU commercialization. We are currently exploring potential financing options that may be available to us, including additional sales of our common stock and the causing the mandatory exercise of our warrants issued on December 11, 2019 for cash. However, we have no commitments to obtain any additional funds, and there can be no assurance such funds will be available on acceptable terms or at all. If we are unable to obtain additional financing in a timely fashion and on terms acceptable to us, our financial condition and results of operations may be materially adversely affected and we may not be able to continue operations or execute our stated commercialization plan.

The financial statements included in this Form 10-K have been prepared assuming we will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. As reflected in the accompanying financial statements, during the year ended December 31, 2019, we incurred net losses of \$13,305,964 and used cash in operations of \$8,588,851. These and other factors raise substantial doubt about our ability to continue as a going concern for one year from the issuance of the accompanying financial statements. The financial statements do not include any adjustments that might be necessary should we be unable to continue as a going concern.

Operating Activities

During the year ended December 31, 2019, we used \$8,588,851 of cash in operating activities primarily as a result of our net loss of \$13,305,964 offset by share-based compensation of \$1,399,547, depreciation and amortization expenses of \$80,577, amortization of debt discount of \$2,355,469, and net changes in operating assets and liabilities of \$597,830.

During the year ended December 31, 2018, we used \$7,702,481 of cash in operating activities primarily as a result of our net loss of \$9,796,261 offset by share-based compensation of \$1,367,762, depreciation and amortization expenses of \$68,316, amortization of debt discount of \$729,241, impairment of inventory of \$287,541 and net changes in operating assets and liabilities of \$(359,079).

Investing Activities

During the year ended December 31, 2019, the Company used \$43,595 in investing activities related to purchase of equipment.

During the year ended December 31, 2018, the Company used \$100,000 in investing activities related to purchase of equipment.

Financing Activities

During the year ended December 31, 2019, financing activities provided \$8,335,278, including \$2,490,501 in proceeds from the placement of senior secured convertible promissory notes and warrants, \$5,344,257 from the issuance of Series A Preferred Stock and warrants, \$375,520 from the issuance of Series B Preferred Stock and warrants, and \$125,000 from the issuance common stock and warrants.

During the year ended December 31, 2018, financing activities provided \$7,736,678 in proceeds from issuance of common stock and \$935,300 in proceeds from the placement of senior secured convertible promissory notes and warrants.

Funding Requirements

We have not completed the commercialization of any of our TAEUS technology platform applications. We expect to continue to incur significant expenses for the foreseeable future. We anticipate that our expenses will increase substantially as we:

- advance the engineering design and development of our NAFLD TAEUS application;
- acquire parts and build finished goods inventory of the FLIP system;
- prepare regulatory filings required for marketing approval of our NAFLD TAEUS application in the United States;
- seek to hire a small internal marketing team to engage and support channel partners and clinical customers for our NAFLD TAEUS application;
- commence marketing of our NAFLD TAEUS application;
- advance development of our other TAEUS applications; and
- add operational, financial and management information systems and personnel, including personnel to support our product development, planned commercialization efforts and our operation as a public company.

It is possible that we will not achieve the progress that we expect because the actual costs and timing of completing the development and regulatory approvals for a new medical device are difficult to predict and are subject to substantial risks and delays. We have no committed external sources of funds. We do not expect that our existing cash will be sufficient for us to complete the commercialization of our NAFLD TAEUS application or to complete the development of any other TAEUS application and we will need to raise substantial additional capital for those purposes. As a result, we will need to finance our future cash needs through public or private equity offerings, debt financings, corporate collaboration and licensing arrangements or other financing alternatives. Our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement and involves risks and uncertainties, and actual results could vary as a result of a number of factors, including the factors discussed in the section of this Annual Report on Form 10-K entitled "Risk Factors". We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect.

Until we can generate a sufficient amount of revenue from our TAEUS platform applications, if ever, we expect to finance future cash needs through public or private equity offerings, debt financings or corporate collaborations and licensing arrangements. Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research or development programs or our commercialization efforts or perhaps even cease the operation of our business. To the extent that we raise additional funds by issuing equity securities, our stockholders may experience additional dilution, and debt financing, if available, may involve restrictive covenants. To the extent that we raise additional funds through collaborations and licensing arrangements, it may be necessary to relinquish some rights to our technologies or applications or grant licenses on terms that may not be favorable to us. We may seek to access the public or private capital markets whenever conditions are favorable, even if we do not have an immediate need for additional capital at that time.

Nasdaq Capital Market Listing

Our common stock is currently traded on the Nasdaq Stock Market LLC (the "Nasdaq"). The Nasdaq imposes, among other requirements, listing maintenance standards including minimum bid price and stockholders' equity requirements. In particular, Nasdaq rules require us to maintain a minimum stockholders' equity of \$2.5 million. On August 14, 2019, we received a notification letter from the Listing Qualifications Staff of the Nasdaq notifying us that, based on our Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, we no longer maintained the minimum \$2.5 million stockholders' equity required for continued listing on The Nasdaq Capital Market under Marketplace Rule 5550(b)(1) (the "Equity Rule"). In response to the notification letter, we submitted a plan to regain compliance and, on October 23, 2019 the Nasdaq notified us that it had accepted the plan and granted us an extension until February 10, 2020 to regain compliance with the Equity Rule. Based on our ability to obtain additional equity during December 2019, we were notified on December 18, 2019 by the Nasdaq that we had regained compliance with the Equity Rule as of that date.

Off-Balance Sheet Transactions

At December 31, 2019, the Company did not have any transactions, obligations or relationships that could be considered off-balance sheet arrangements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Not applicable.

Item 8. Financial Statements and Supplementary Data.

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ENDRA Life Sciences Inc.
December 31, 2019

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To the Board of Directors and Stockholders of
ENDRA Life Sciences Inc. and Subsidiary

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of ENDRA Life Sciences Inc. and subsidiary (The "Company") as of December 31, 2019 and 2018 and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2019, and the related notes (collectively referred to as the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2019 and 2018, and the consolidated results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principles

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for leases in 2019 due to the adoption of ASU No. 2016-02, Leases (Topic 842), as amended, effective January 1, 2019, using the modified retrospective approach.

The Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the financial statements, the Company has an accumulated deficit, recurring losses, and expects continuing future losses that raise substantial doubt about the Company's ability to continue as a going concern. Management's evaluation of the events and conditions and management's plans regarding these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ RBSM LLP

We have served as the Company's auditor since 2015.

Henderson, Nevada
March 26, 2020

ENDRA Life Sciences Inc.
Consolidated Balance Sheets

Assets	December 31, 2019	December 31, 2018
Assets		
Cash	\$ 6,174,207	\$ 6,471,375
Prepaid expenses	116,749	145,424
Inventory	113,442	59,444
Other current assets	130,701	273,315
Total Current Assets	<u>6,535,099</u>	<u>6,949,558</u>
Other Assets		
Fixed assets, net	236,251	273,233
Right of use assets	404,919	-
Total Assets	<u>\$ 7,176,269</u>	<u>\$ 7,222,791</u>
Liabilities and Stockholders' Equity		
Current Liabilities:		
Accounts payable and accrued liabilities	\$ 1,708,525	\$ 974,583
Convertible notes payable, net of discount	298,069	-
Lease liabilities, current portion	66,193	-
Total Current Liabilities	<u>2,072,787</u>	<u>974,583</u>
Long Term Debt:		
Lease liabilities	342,812	-
Total Long Term Debt	<u>342,812</u>	<u>-</u>
Total Liabilities	<u>2,415,599</u>	<u>974,583</u>
Stockholders' Equity		
Series A Convertible Preferred Stock, \$0.0001 par value; 10,000 shares authorized; 6,338.490 shares issued and outstanding	1	-
Series B Convertible Preferred Stock, \$0.0001 par value; 1,000 shares authorized; 351.711 shares issued and outstanding	-	-
Common stock, \$0.0001 par value; 50,000,000 shares authorized; 8,421,401 and 7,422,642 shares issued and outstanding	842	742
Additional paid in capital	49,933,736	33,939,162
Stock payable	43,528	-
Accumulated deficit	(45,217,437)	(27,691,696)
Total Stockholders' Equity	<u>4,760,670</u>	<u>6,248,208</u>
Total Liabilities and Stockholders' Equity	<u>\$ 7,176,269</u>	<u>\$ 7,222,791</u>

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

ENDRA Life Sciences Inc.
Consolidated Statements of Operations

	Year Ended December 31, 2019	Year Ended December 31, 2018
Revenue	\$ -	\$ 6,174
Cost of Goods Sold	-	-
Gross Profit	<u>-</u>	<u>6,174</u>
Operating Expenses		
Research and development	6,574,999	4,722,465
Sales and marketing	412,434	262,641
General and administrative	3,856,159	3,752,535
Impairment of inventory	-	287,541
Total operating expenses	<u>10,843,592</u>	<u>9,025,182</u>
Operating loss	<u>(10,843,592)</u>	<u>(9,019,008)</u>
Other Expenses		
Amortization of debt discount	(2,355,469)	(729,241)
Other expense	(106,903)	(48,012)
Total other expenses	<u>(2,462,372)</u>	<u>(777,253)</u>
Loss from operations before income taxes	<u>(13,305,964)</u>	<u>(9,796,261)</u>
Provision for income taxes	-	-
Deemed dividend related to Preferred Stock	<u>\$ (4,219,777)</u>	<u>-</u>
Net Loss attributable to common stockholders	<u>\$ (17,525,741)</u>	<u>\$ (9,796,261)</u>
Net loss per share – basic and diluted	<u>\$ (2.34)</u>	<u>\$ (2.17)</u>
Weighted average common shares – basic and diluted	<u>7,499,984</u>	<u>4,504,873</u>

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

ENDRA Life Sciences Inc.
Consolidated Statements of Stockholders' Equity

	Series A Convertible Preferred Stock		Series B Convertible Preferred Stock		Common stock		Additional Paid in Capital	Stock Payable	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	Shares	Amount				
Balance as of December 31, 2017	-	\$ -	-	\$ -	3,923,027	\$ 392	\$ 23,170,531	\$ -	\$ (17,895,435)	\$ 5,275,488
Common stock issued for cash	-	-	-	-	2,863,500	286	7,736,392	-	-	7,736,678
Common stock issued for note conversion	-	-	-	-	636,115	64	1,076,936	-	-	1,077,000
Common stock issued for services	-	-	-	-	-	-	47,865	-	-	47,865
Warrants issued for services	-	-	-	-	-	-	71,756	-	-	71,756
Fair value of vested stock options	-	-	-	-	-	-	1,248,141	-	-	1,248,141
Debt discount	-	-	-	-	-	-	587,541	-	-	587,541
Net loss	-	-	-	-	-	-	-	-	(9,796,261)	(9,796,261)
Balance as of December 31, 2018	-	\$ -	-	\$ -	7,422,642	\$ 742	\$ 33,939,162	\$ -	\$ (27,691,696)	\$ 6,248,208
Balance as of December 31, 2018	-	-	-	-	7,422,642	742	33,939,162	-	(27,691,696)	6,248,208
Series A Convertible Preferred Stock issued	6,338,490	1	-	-	904,526	90	7,412,361	-	-	7,412,452
Series B Convertible Preferred Stock issued	-	-	351.711	-	-	-	375,520	-	-	375,520
Common stock issued for note conversions	-	-	-	-	94,233	10	140,396	-	-	140,406
Fair value of vested stock options	-	-	-	-	-	-	1,399,547	-	-	1,399,547
Debt discount	-	-	-	-	-	-	2,490,501	-	-	2,490,501
Deemed dividend on preferred stock	-	-	-	-	-	-	4,219,777	-	(4,219,777)	-
Stock to be issued	-	-	-	-	-	-	(43,528)	43,528	-	-
Net loss	-	-	-	-	-	-	-	-	(13,305,964)	(13,305,964)
Balance as of December 31, 2019	<u>6,338,490</u>	<u>1</u>	<u>351.711</u>	<u>-</u>	<u>8,421,401</u>	<u>842</u>	<u>49,933,736</u>	<u>43,528</u>	<u>(45,217,437)</u>	<u>4,760,670</u>

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

ENDRA Life Sciences Inc.
Consolidated Statements of Cash Flows

	Year Ended December 31, 2019	Year Ended December 31, 2018
Cash Flows from Operating Activities		
Net loss	\$ (13,305,964)	\$ (9,796,261)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	80,577	68,316
Common stock, options and warrants issued for services	1,399,547	1,367,762
Amortization of debt discount	2,355,469	729,241
Impairment of other assets	249,256	-
Impairment of inventory	-	287,541
Amortization of right of use assets	34,434	-
Changes in operating assets and liabilities:		
Increase in accounts receivable	-	6,850
Increase in prepaid expenses	28,675	(77,928)
Decrease in lease liability	(30,348)	-
Increase in inventory	(53,998)	(155,305)
Decrease in other asset	(106,642)	(259,066)
Increase in accounts payable and accrued liabilities	760,143	126,368
Net cash used in operating activities	<u>(8,588,851)</u>	<u>(7,702,481)</u>
Cash Flows from Investing Activities		
Purchases of fixed assets	(43,595)	(100,000)
Net cash used in investing activities	<u>(43,595)</u>	<u>(100,000)</u>
Cash Flows from Financing Activities		
Proceeds from senior secured convertible promissory notes, net of fees	2,490,501	935,300
Proceeds from issuance of Series A Convertible Preferred Stock	5,344,257	-
Proceeds from issuance of Series B Convertible Preferred Stock	375,520	-
Proceeds from issuance of common stock	125,000	7,736,678
Net cash provided by financing activities	<u>8,335,278</u>	<u>8,671,978</u>
Net decrease in cash	(297,168)	869,497
Cash, beginning of period	6,471,375	5,601,878
Cash, end of period	<u>\$ 6,174,207</u>	<u>\$ 6,471,375</u>
Supplemental disclosures of cash items		
Interest paid	\$ -	\$ 40,085
Income tax paid	\$ -	\$ -
Supplemental disclosures of non-cash items		
Discount on convertible notes	\$ 2,490,501	\$ 587,541
Conversion of convertible notes and accrued interest	\$ 140,406	\$ 1,077,000
Exchange of balance in convertible notes and accrued interest for Series A preferred stock	\$ 1,943,195	\$ -
Deemed Dividend	\$ 4,219,777	\$ -
Right of use asset	\$ 404,919	\$ -
Lease liability	\$ 409,005	\$ -

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

ENDRA Life Sciences Inc.
Notes to Consolidated Financial Statements
For the years ended December 31, 2019 and 2018

Note 1 – Nature of the Business

ENDRA Life Sciences Inc. (“ENDRA” or the “Company”) is developing technology for increasing the capabilities of clinical diagnostic ultrasound, to broaden patient access to the safe diagnosis and treatment of a number of significant medical conditions in circumstances where expensive X-ray computed tomography (“CT”) and magnetic resonance imaging (“MRI”) technology is unavailable or impractical.

ENDRA was incorporated on July 18, 2007 as a Delaware corporation.

ENDRA Life Sciences Canada Inc. was organized under the laws of Ontario, Canada on July 6, 2017, and is wholly owned by the Company.

Note 2 – Summary of Significant Accounting Policies

Use of Estimates

The preparation of the financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosure of contingent liabilities at the date of the financial statements and the reported amounts of expenses during the reporting period. Actual results could differ from those estimates.

Management makes estimates that affect certain accounts including deferred income tax assets, accrued expenses, fair value of equity instruments and reserves for any other commitments or contingencies. Any adjustments applied to estimates are recognized in the period in which such adjustments are determined.

Principles of Consolidation

The Company’s consolidated financial statements include all accounts of the Company and its consolidated subsidiary and/or entities as of reporting period ending date(s) and for the reporting period(s) then ended. All inter-company balances and transactions have been eliminated.

Basis of Presentation

The accompanying consolidated financial statements and related notes have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission (the “SEC”).

Cash and Cash Equivalents

The Company considers all cash on hand and in banks, including accounts in book overdraft positions, certificates of deposit and other highly-liquid investments with maturities of one year or less, when purchased, to be cash. As of December 31, 2019 and December 31, 2018, the Company had no cash equivalents. The Company maintains its cash in bank deposit accounts which, at times, may exceed federally insured limits. The Company has not experienced any losses in such accounts and periodically evaluates the credit worthiness of the financial institutions and has determined the credit exposure to be negligible.

Inventory

The Company’s inventory is stated at the lower of cost or estimated net realizable value, with cost primarily determined on a weighted-average cost basis on the first-in, first-out method. The Company periodically determines whether a reserve should be taken for devaluation or obsolescence of inventory.

Capitalization of Fixed Assets

The Company capitalizes expenditures related to property and equipment, subject to a minimum rule, that have a useful life greater than one year for: (1) assets purchased; (2) existing assets that are replaced, improved or the useful lives have been extended; or (3) all land, regardless of cost. Acquisitions of new assets, additions, replacements and improvements (other than land) costing less than the minimum rule in addition to maintenance and repair costs, including any planned major maintenance activities, are expensed as incurred.

Revenue Recognition

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, "Revenue from Contracts with Customers" ("ASC Topic 606"). This standard provides a single set of guidelines for revenue recognition to be used across all industries and requires additional disclosures. The updated guidance introduces a five-step model to achieve its core principal of the entity recognizing revenue to depict the transfer of goods or services to customers at an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The Company adopted the updated guidance effective January 1, 2018 using the full retrospective method. The new standard did not have a material impact on its financial position and results of operations, as it did not change the manner or timing of recognizing revenue.

Under ASC Topic 606, in order to recognize revenue, the Company is required to identify an approved contract with commitments to perform respective obligations, identify rights of each party in the transaction regarding goods to be transferred, identify the payment terms for the goods transferred, verify that the contract has commercial substance and verify that collection of substantially all consideration is probable. The adoption of ASC Topic 606 did not have an impact on the Company's operations or cash flows.

Research and Development Costs

The Company follows FASB Accounting Standards Codification ("ASC") Subtopic 730-10, "Research and Development". Research and development costs are charged to the statement of operations as incurred. During the years ended December 31, 2019 and 2018, the Company incurred \$6,574,999 and \$4,722,465 of expenses related to research and development costs, respectively.

Income Taxes

The Company utilizes ASC Topic 740, "Income Taxes," which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. Under this method, deferred tax assets and liabilities are determined based on the difference between the tax basis of assets and liabilities and their financial reporting amounts based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. A valuation allowance is recorded when it is "more likely-than-not" that a deferred tax asset will not be realized.

The Company generated a deferred tax asset through net operating loss carry-forwards. However, a valuation allowance of 100% has been established due to the uncertainty of the Company's realization of the net operating loss carry forward prior to its expiration.

Net Earnings (Loss) Per Common Share

The Company computes earnings per share under ASC Subtopic 260-10, "Earnings Per Share". Basic earnings (loss) per share is computed by dividing the net income (loss) attributable to the common stockholders (the numerator) by the weighted average number of shares of common stock outstanding (the denominator) during the reporting periods. Diluted loss per share is computed by increasing the denominator by the weighted average number of additional shares that could have been outstanding from securities convertible into common stock (using the "treasury stock" method), unless their effect on net loss per share is anti-dilutive. There were 24,949,725 and 3,900,939 potentially dilutive shares, which include outstanding common stock options, warrants, and convertible notes, as of December 31, 2019 and December 31, 2018, respectively.

The potential shares, which are excluded from the determination of basic and diluted net loss per share as their effect is anti-dilutive, are as follows:

	December 31, 2019	December 31, 2018
Options to purchase common stock	3,449,319	1,272,911
Warrants to purchase common stock	13,496,924	2,628,028
Shares issuable upon conversion of notes	362,568	-
Shares issuable upon conversion of Series A Preferred Stock	7,285,651	-
Shares issuable upon conversion of Series B Preferred Stock	355,263	-
Potential equivalent shares excluded	24,949,725	3,900,939

Fair Value Measurements

Disclosures about fair value of financial instruments require disclosure of the fair value information, whether or not recognized in the balance sheet, where it is practicable to estimate that value.

In accordance with ASC Topic 820, "Fair Value Measurements and Disclosures," the Company measures certain financial instruments at fair value on a recurring basis. ASC Topic 820 defines fair value, established a framework for measuring fair value in accordance with accounting principles generally accepted in the United States, and expands disclosures about fair value measurements.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC Topic 820 established a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). These tiers include:

- Level 1, defined as observable inputs such as quoted prices for identical instruments in active markets;
- Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable such as quoted prices for similar instruments in active markets or quoted prices for identical or similar instruments in markets that are not active; and
- Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions, such as valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

Financial assets are considered Level 3 when their fair values are determined using pricing models, discounted cash flow methodologies or similar techniques and at least one significant model assumption or input is unobservable.

The carrying amounts of the Company's financial assets and liabilities, including cash, accounts receivable, prepaid expenses, accounts payable, accrued expenses, and other current liabilities, approximate their fair values because of the short maturity of these instruments. The fair value of notes payable and convertible notes approximates their fair values since the current interest rates and terms on these obligations are the same as prevailing market rates.

Share-based Compensation

The Company's 2016 Omnibus Incentive Plan (the "Omnibus Plan") permits the grant of stock options and other share-based awards to its employees, consultants and non-employee members of the board of directors. Each January 1 the pool of shares available for issuance under the Omnibus Plan automatically increases by an amount equal to the lesser of (i) the number of shares necessary such that the aggregate number of shares available under the Omnibus Plan equals 25% of the number of fully-diluted outstanding shares on the increase date (assuming the conversion of all outstanding shares of preferred stock and other outstanding convertible securities and exercise of all outstanding options and warrants to purchase shares) and (ii) if the board of directors takes action to set a lower amount, the amount determined by the board. On January 1, 2020, the pool of shares available for issuance under the Omnibus Plan automatically increased by 3,202,280 shares from 2,649,378 shares to 5,861,658.

The Company records share-based compensation in accordance with the provisions of the Share-based Compensation Topic of the FASB Codification. The guidance requires the use of option-pricing models that require the input of highly subjective assumptions, including the option's expected life and the price volatility of the underlying stock. The fair value of each option grant is estimated on the date of grant using the Black-Scholes option valuation model, and the resulting charge is expensed using the straight-line attribution method over the vesting period.

Stock compensation expense recognized during the period is based on the value of share-based awards that were expected to vest during the period adjusted for estimated forfeitures. The estimated fair value of grants of stock options and warrants to non-employees of the Company is charged to expense, if applicable, in the financial statements. These options vest in the same manner as the employee options granted under the stock incentive plan as described above.

Debt Discount

The Company determines if its outstanding convertible promissory notes should be accounted for as liability or equity under ASC Topic 480, "Liabilities — Distinguishing Liabilities from Equity." ASC Topic 480 applies to certain contracts involving a company's own equity, and requires that issuers classify the following freestanding financial instruments as liabilities: mandatorily redeemable financial instruments, obligations that require or may require repurchase of the issuer's equity shares by transferring assets (e.g., written put options and forward purchase contracts), and certain obligations where at inception the monetary value of the obligation is based solely or predominantly on:

- A fixed monetary amount known at inception (for example, a payable settleable with a variable number of the issuer's equity shares with an issuance date fair value equal to a fixed dollar amount);
- Variations in something other than the fair value of the issuer's equity shares (for example, a financial instrument indexed to the S&P 500 and settleable with a variable number of the issuer's equity shares); or
- Variations inversely related to changes in the fair value of the issuer's equity shares (for example, a written put that could be net share settled).

Beneficial Conversion Feature

If the conversion feature of conventional convertible debt provides for a rate of conversion that is below market value, this feature is characterized as a beneficial conversion feature ("BCF"). A BCF is recorded by the Company as a debt discount pursuant to ASC Topic 470-20 "Debt with Conversion and Other Options." In those circumstances, the convertible debt is recorded net of the discount related to the BCF and the Company amortizes the discount to interest expense over the life of the debt using the effective interest method.

If the Company determines the instrument meets the guidance under ASC Topic 480, the instrument is accounted for as a liability with a respective debt discount. The Company has previously recorded debt discounts in connection with raising funds through the issuance of promissory notes. These costs are amortized to noncash interest expense over the life of the debt. If a conversion of the underlying debt occurs, a proportionate share of the unamortized amounts is immediately expensed. See Note 6, Convertible Notes, for further discussion on the Company's accounting treatment for the outstanding notes.

Going Concern

The Company's financial statements are prepared using accounting principles generally accepted in the United States ("U.S. GAAP") applicable to a going concern, which contemplates the realization of assets and liquidation of liabilities in the normal course of business. The Company has limited commercial experience and had a cumulative net loss from inception to December 31, 2019 of \$45,217,437. The Company had working capital of \$4,462,311 as of December 31, 2019. The Company has not established an ongoing source of revenue sufficient to cover its operating costs and to allow it to continue as a going concern. The accompanying financial statements for the period ended December 31, 2019 have been prepared assuming the Company will continue as a going concern. The Company's cash resources will likely be insufficient to meet its anticipated needs during the next twelve months. The Company will require additional financing to fund its future planned operations, including research and development and commercialization of its products.

The ability of the Company to continue as a going concern is dependent on the Company obtaining adequate capital to fund operating losses until it establishes a revenue stream and becomes profitable. Management's plans to continue as a going concern include raising additional capital through sales of equity securities and borrowing. However, management cannot provide any assurances that the Company will be successful in accomplishing any of its plans. If the Company is not able to obtain the necessary additional financing on a timely basis, the Company will be required to delay, reduce the scope of or eliminate one or more of the Company's research and development activities or commercialization efforts or perhaps even cease the operation of its business. The ability of the Company to continue as a going concern is dependent upon its ability to successfully secure other sources of financing and attain profitable operations. There is substantial doubt about the ability of the Company to continue as a going concern for one year from the issuance of the accompanying consolidated financial statements. The accompanying consolidated financial statements do not include any adjustments that might be necessary if the Company is unable to continue as a going concern.

Recent Accounting Pronouncements

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers." ASU 2014-09 is a comprehensive revenue recognition standard that superseded nearly all previous revenue recognition guidance under U.S. GAAP and replaced it with a principle-based approach for determining revenue recognition. Under ASU 2014-09, revenue is recognized when a customer obtains control of promised goods or services and is recognized in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. In addition, the standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The FASB has since issued ASU 2016-08, ASU 2016-10, ASU 2016-11, ASU 2016-12, and ASU 2016-20, all of which clarify certain implementation guidance within ASU 2014-09. ASU 2014-09 is effective for interim and annual periods beginning after December 15, 2017. The standard can be adopted either retrospectively to each prior reporting period presented (full retrospective method), or retrospectively with the cumulative effect of initially applying the guidance recognized at the date of initial application (the cumulative catch-up transition method). The Company has reviewed ASU 2014-09 and using the full retrospective method has determined that its adoption has had no impact on its financial position, results of operations or cash flows. The Company adopted the provisions of this standard in the first quarter of fiscal 2018.

In February 2016, the FASB issued ASU No. 2016-02, "Leases." ASU 2016-02 requires a lessee to record a right of use asset and a corresponding lease liability on the balance sheet for all leases with terms longer than 12 months. ASU 2016-02 is effective for all interim and annual reporting periods beginning after December 15, 2018. Early adoption is permitted. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest period presented in the financial statements. The Company evaluated the impact that the application of the new standard has on its consolidated financial statements and related disclosures, and determined that it should record a total lease liability of \$431,363, with a corresponding right of use asset valued at \$430,681. The Company adopted the provisions of this standard in the first quarter of fiscal 2019.

Other recent accounting pronouncements issued by the FASB, including its Emerging Issues Task Force, the American Institute of Certified Public Accountants, and the SEC, did not or in management's opinion will not have a material impact on the Company's present or future consolidated financial statements.

Note 3 – Inventory

As of December 31, 2019 and December 31, 2018, inventory consisted of raw materials and subassemblies to be used in the assembly of a TAEUS system. As of December 31, 2019, the Company had no orders pending for the sale of a TAEUS system. As of December 31, 2018, the Company took a full reserve against its available inventory of parts for its discontinued Nexus 128 system. As of December 31, 2019 and December 31, 2018, the Company had inventory valued at \$113,442 and \$59,444, respectively.

Note 4 – Fixed Assets

As of December 31, 2019 and December 31, 2018, fixed assets consisted of the following:

	December 31, 2019	December 31, 2018
Property, leasehold and capitalized software	\$ 679,179	\$ 679,179
TAEUS development and testing	43,596	--
Accumulated depreciation	(486,524)	(405,946)
Fixed assets, net	\$ 236,251	\$ 273,233

Depreciation expense for the years ended December 31, 2019 and 2018 was \$80,577 and \$68,316, respectively.

Note 5 – Accounts Payable and Accrued Liabilities

As of December 31, 2019 and December 31, 2018, current liabilities consisted of the following:

	December 31, 2019	December 31, 2018
Accounts payable	\$ 1,278,431	\$ 631,472
Accrued payroll	94,862	29,302
Accrued bonuses	295,794	263,497
Accrued employee benefits	5,750	27,804
Accrued interest	9,738	--
Insurance premium financing	23,950	22,508
Total	\$ 1,708,525	\$ 974,583

Note 6 – Convertible Notes

July 2019 Notes

On July 26, 2019 the Company conducted a private placement offering in which the Company sold senior secured convertible promissory notes (the “July 2019 Notes”) and warrants exercisable for shares of the Company’s common stock (the “July 2019 Warrants”) to accredited investors for a purchase price approximately \$2.8 million. The purchase price covered the purchase of \$2,587,895 aggregate principal amount of July 2019 Note and July 2019 Warrants exercisable for an aggregate of 1,736,843 shares of common stock. The net proceeds to the Company were approximately \$2.5 million, after deducting placement agent fees and other offering expenses.

The Company sold the July 2019 Notes and July 2019 Warrants pursuant to a Securities Purchase Agreement, dated July 26, 2019, between the Company and each purchaser. The July 2019 Notes bear interest at a rate of 10% per annum until maturity on April 26, 2020. Interest is paid in arrears on the outstanding principal amount on the three month anniversary of the issuance of the July 2019 Notes, and each three month period thereafter, and finally on the maturity date. Holders of July 2019 Notes are entitled to convert principal and accrued, unpaid interest on the July 2019 Notes into shares of common stock. The July 2019 Notes are convertible into common stock at a conversion price per share equal to \$1.49 and were initially convertible into 1,736,843 shares of common stock. The July 2019 Notes provide for customary events of default. In the case of an event of default, each noteholder may declare its July 2019 Note to be due and payable immediately without further action or notice. If an event of default occurs and is continuing, interest on the July 2019 Notes will automatically be increased to 18% until the default is cured.

Each July 2019 Warrants entitles the holder to purchase one share of common stock for an exercise price per share equal to \$1.49. The July 2019 Warrants are exercisable for an aggregate of 1,736,843 shares of common stock commencing immediately upon issuance and expire July 26, 2022. The July 2019 Warrants provide for cashless exercise and customary anti-dilution protection. The terms of the Placement Agent Warrant (as defined below) are the same as those of the July 2019 Warrants.

National Securities Corporation (the “Placement Agent”) acted as placement agent in the offering pursuant to a Placement Agent Agreement, dated July 9, 2019 (the “Placement Agent Agreement”). Pursuant to the Placement Agent Agreement, the Company paid to the Placement Agent a commission of 10% of the gross proceeds from the offering, reimbursed \$30,000 of the Placement Agent’s expenses and issued to the Placement Agent a warrant exercisable for 173,685 shares of common stock (the “Placement Agent Warrant”).

The July 2019 Notes and July 2019 Warrants include embedded derivatives that require bifurcation from the host contract under the provisions of ASC 815-40, "Derivatives and Hedging." The estimated fair value of the derivative warrant instruments was calculated using a Black-Scholes valuation model. At inception, the aggregate relative fair value of the 1,910,538 warrants issued to the investors and the Placement Agent in July 2019 was determined to be \$1,993,714 using the Black-Scholes-Merton Option Pricing model with the following average assumptions: (i) volatility rate of 111%, (ii) discount rate of 0%, (iii) zero expected dividend yield, and (iv) expected life of three years. Out of such amount, \$1,126,138 was recorded as debt discount upon issuance using allocation of proceeds. At the issuance of the July 2019 Notes, the effective conversion price was analyzed at \$0.84 per share of common stock and the market price of the shares on the date of conversion was \$1.54 per share. As a result, the Company recognized aggregate beneficial conversion features of \$1,440,638. \$1,147,257 was recorded as debt discount upon issuance of the July 2019 Notes using allocation of proceeds. As a result, the Company recorded a note discount of \$2,587,895 to account for the funding cost of \$314,500 and the relative fair values of the warrants' and the notes' beneficial conversion features, which will be amortized as interest over the terms of the warrants and the notes or in full upon exercise of the warrants and conversion of the notes. During the year ended December 31, 2019, the Company amortized \$2,355,469 of such discount to interest expense, and the unamortized discount as of December 31, 2019 was \$224,050.

On December 11, 2019, the Company completed an offering of its Series A Convertible Preferred Stock ("Series A Preferred Stock"), described below under Note 7. In connection with the offering, the Company retired \$1,919,008 principal amount of the July 2019 Notes and \$24,184 in accrued interest, which amounts were used by the noteholders to purchase 1,690.58 shares of Series A Preferred Stock. As of December 31, 2019, we had a total of \$530,495 in principal amount of July 2019 Notes outstanding, unamortized debt discount of \$232,426, for a net balance of \$298,069 amount of the July 2019 Notes remained outstanding.

June 2018 Notes

On June 28, 2018, the Company conducted a private placement offering in which the Company sold \$1,077,000 aggregate principal amount of senior secured convertible promissory notes (the "June 2018 Notes") to accredited investors and National Securities Corporation, which served as placement agent in the offering. Certain of the Company's officers and directors participated in the offering.

The June 2018 Notes when issued were convertible into shares of the Company's common stock at a conversion price per share equal to the lesser of (a) the lowest per share price at which common stock was sold in a Qualified Financing (as defined below), less a discount of 20%, or (b) \$2.016, but in any event no less than a conversion price floor of \$1.40.

The June 2018 Notes bore interest at a rate of 10% per annum until maturity on December 31, 2018 (the "Maturity Date"). Interest was paid in arrears on the outstanding principal amount on the three month anniversary of the issuance of the June 2018 Notes and each three month period thereafter and on the Maturity Date or on the date of conversion in full of each such June 2018 Note. Pursuant to their terms, the principal amount of the June 2018 Notes were automatically converted into shares of common stock upon the consummation of a sale (or series of related sales) by the Company of common stock resulting in aggregate gross cash proceeds of at least \$7.0 million, which occurred on November 13, 2018 upon the consummation of an underwritten public offering..

In addition, on June 28, 2018, the Company issued warrants exercisable for 267,113 shares of the Company's common stock to accredited investors and issued to National Securities Corporation, which served as placement agent in the offering, and its designees warrants exercisable for 53,423 shares of common stock (collectively, the "June 2018 Warrants"). Each July 2018 Warrant entitles the holder to purchase one share of common stock for an exercise price per share equal to \$2.52, which was the closing bid price for a share of common stock on the Nasdaq Capital Market on June 27, 2018. The July 2018 Warrants expire June 28, 2021. The fair value of these warrants was determined to be \$587,541 using the Black-Scholes-Merton option-pricing model based on the following assumptions: (i) volatility rate of 99%, (ii) discount rate of 0%, (iii) zero expected dividend yield, and (iv) expected life of 3 years. The value of the July 2018 Warrants of \$587,541 was considered as debt discount upon issuance and is being amortized as interest over the term of the notes or in full upon the conversion of the corresponding notes. During year ended December 31, 2018, the Company amortized \$587,541 of such discount to interest expense, and there was no unamortized discount as of December 31, 2018.

On September 12, 2018, the Company issued 24,801 shares of its common stock at an effective price of \$2.02 per share to convert \$50,000 principal amount of its outstanding June 2018 Notes. On November 13, 2018, the remaining outstanding principal amount of June 2018 Notes (\$1,027,000) was converted into 611,314 shares of Company's common stock at an effective price of \$1.625 per share. Accrued interest of \$40,085 was paid in full in cash.

Note 7 – Capital Stock

At December 31, 2019, the authorized capital of the Company consisted of 60,000,000 shares of capital stock, consisting of 50,000,000 shares of common stock with a par value of \$0.0001 per share and 10,000,000 shares of preferred stock with a par value of \$0.0001 per share. The Company has allocated 10,000 shares of its preferred stock to Series A Preferred, 1,000 shares of its preferred stock to Series B Preferred, and the remainder of 9,989,000 remains Authorized but unallocated.

As of December 31, 2019, there were 8,421,401 shares of common stock, 6,338.490 shares of Series A Preferred Stock, 351.711 shares of Series B Preferred Stock issued and outstanding, and a dividend payable balance of \$43,528. As of December 31, 2018, there were 7,422,642 shares of common stock and no preferred stock issued and outstanding.

During the year ended December 31, 2019, the Company issued 94,233 shares of its common stock upon the conversion of \$140,406 principal amount of, and in respect of accrued interest on, July 2019 Notes.

During the year ended December 31, 2018, the Company issued 636,115 shares of common stock upon the conversion of \$1,077,000 principal amount of June 2018 Notes.

December 2019 Offering of Series A Preferred Stock, Common Stock and Warrants

On December 11, 2019, the Company completed a private placement offering in which the Company sold 6,338.49 shares of its Series A Preferred Stock and 904,526 shares of its common stock, along with warrants (the "December 11, 2019 Warrants") exercisable for an aggregate of 8,190,225 shares of common stock for approximately \$7.9 million of gross proceeds. The offering was made pursuant to a Securities Purchase Agreement (the "Purchase Agreement"), dated as of December 5, 2019, between the Company and the investors. Pursuant to the Purchase Agreement, each investor elected whether to receive shares of Series A Preferred Stock or shares of common stock in the Offering. The Company used approximately \$1.9 million of the net proceeds from the offering to repay debt represented by July 2019 Notes and plans to use the remaining net proceeds for working capital and general corporate purposes.

In connection with the closing of the offering, the Company filed a Certificate of Designations of Series A Convertible Preferred Stock (the "Series A Certificate of Designations") with the Secretary of State of the State of Delaware setting forth the rights and preferences of the Series A Preferred Stock. Each share of Series A Preferred Stock has a \$1,000 issue price (the "Issue Price"). Dividends accrue on the Issue Price at a rate of 6.0% per annum and are payable to holders of Series A Preferred Stock as, when and if declared by the Company's Board of Directors. Shares of Series A Preferred Stock, including accrued but unpaid dividends, are convertible into common stock at a conversion price of \$0.87 per share. The conversion price is subject to proportional adjustment for certain transactions relating to the Company's capital stock, including stock splits, stock dividends and similar transactions. Holders of shares of Series A Preferred Stock vote with the holders of common stock and are entitled to a number of votes equal to the number of shares of common stock into which such holder's shares of Series A Preferred Stock are then convertible. Holders of Series A Preferred Stock are entitled to a liquidation preference in the event of any liquidation, dissolution or winding up of the Company based on their shares' aggregate Issue Price and accrued and unpaid dividends thereon. Holders may convert their shares of Series A Preferred Stock into common stock at any time and the Company has the right to cause each holder to convert their shares of Series A Preferred Stock if at any time (i) the simple average of the daily volume-weighted average price of Common Stock for 10 consecutive trading days is greater than \$1.74 (as adjusted for stock splits, stock dividends and similar transactions) and (ii) there is then an effective registration statement registering under the Securities Act of 1933, as amended (the "Securities Act"), the resale of the shares of common stock issuable upon such conversion of Series A Preferred Stock (the "Series A Forced Conversion Conditions").

The simple average of the Daily VWAP (as defined in the Series A Certificate of Designations) for the 10 consecutive trading days from January 8, 2020 to January 22, 2020, inclusive, was \$1.82, satisfying the first Forced Conversion Condition. On January 27, 2020, the SEC declared effective the Company's Registration Statement on Form S-3 (File No. 333-235883) registering under the Securities Act the resale of the shares of common stock issuable upon the conversion of Series A Preferred Stock, shares of common stock issued in the offering, and shares of common stock issuable upon the exercise of December 11, 2019 Warrants and December 19, 2019 Warrants.

Each December 11, 2019 Warrant entitles the holder to purchase a share of common stock for an exercise price equal to \$0.87. The December 11, 2019 Warrants are exercisable commencing immediately upon issuance and expire on the date five years after the date of issuance, unless earlier terminated pursuant to the terms of the December 11, 2019 Warrant. If, during the term of the December 11, 2019 Warrants, the Series A Forced Conversion Conditions are met, the Company may deliver notice thereof to the holders of the December 11, 2019 Warrants and, after a 30-day period following such notice, any unexercised December 11, 2019 Warrants will be forfeited. The December 11, 2019 Warrants provide for cashless exercise only if there is no effective registration statement registering under the Securities Act the resale of the shares of Common Stock issuable upon exercise of the December 11, 2019 Warrants. As described in the preceding paragraph, the Series A Forced Conversion Conditions have been met with respect to the December 11, 2019 Warrants.

The Securities Purchase Agreement, dated December 5, 2019, includes customary representations, warranties and covenants. In connection with the offering, the Company paid to the placement agent a commission of 8.0% of the gross proceeds from the offering, will reimburse up to \$35,000 of the placement agent's documented expenses and issued to the placement agent and its designees warrants exercisable for an aggregate of 327,606 shares of Common Stock (the "Series A Placement Agent Warrant"). The terms of the Series A Placement Agent Warrant are the same as those of the December 11, 2019 Warrants.

Series A Preferred Stock Deemed Dividend, Beneficial Conversion Calculation

After factoring in the relative fair value of the warrants issued in conjunction with the Series A Preferred Stock, the effective conversion price is \$0.45 per share, compared to the market price of \$0.90 per share on the date of issuance. As a result, a \$4,208,612 beneficial conversion feature was recorded as a deemed dividend in the consolidated statement of operations because the Series A Preferred Stock is immediately convertible, with a credit to additional paid-in capital. The relative fair value of the warrants issued with the Series A Preferred Stock of \$2,766,941 was recorded as a reduction to the carrying amount of the preferred stock in the consolidated balance sheet. The value of the warrants was determined utilizing the binomial option pricing model using a term of 5 years, a volatility of 114%, a risk-free interest rate of 1.64%, a 6% rate of dividends, and a call multiple of 2.

December 2019 Offering of Series B Preferred Stock and Warrants

On December 19, 2019, the Company completed a private placement offering in which the Company sold 351,711 shares of its Series B Preferred Stock and warrants (the "December 19, 2019 Warrants") exercisable for an aggregate of 426,316 shares of the Company's common stock to the investors for approximately \$405,000 of gross proceeds. The Company plans to use the net proceeds from the offering for working capital and general corporate purposes.

In connection with the closing of the offering, the Company filed a Certificate of Designations of Series B Convertible Preferred Stock (the "Series B Certificate of Designations") with the Secretary of State of the State of Delaware setting forth the rights and preferences of the Series B Preferred Stock. The Series B Preferred Stock has substantially the same rights and preferences as the Series A Preferred Stock, except for a different conversion price and trading price of common stock at which the Series B Preferred Stock becomes subject to automatic conversion. Each share of Series B Preferred Stock has a \$1,000 issue price (the "Issue Price"). Dividends accrue on the Issue Price at a rate of 6.0% per annum and are payable to holders of Preferred Stock as, when and if declared by the Company's Board of Directors. Shares of Series B Preferred Stock, including accrued but unpaid dividends, are convertible into Common Stock at a conversion price of \$0.99 per share of common stock. The conversion price is subject to proportional adjustment for certain transactions relating to the Company's capital stock, including stock splits, stock dividends and similar transactions. Holders of shares of Series B Preferred Stock vote with the holders of common stock and are entitled to a number of votes equal to the number of shares of common stock into which such holder's shares of Series A Preferred Stock are then convertible. Holders of Series B Preferred Stock are entitled to a liquidation preference in the event of any liquidation, dissolution or winding up of the Company based on their shares' aggregate Issue Price and accrued and unpaid dividends. Such liquidation preference of Series B Preferred Stock holders is on a pari passu basis with holders of Series A Preferred Stock. Holders may convert their shares of Series B Preferred Stock into common stock at any time and the Company has the right to cause each holder to convert their shares of Series B Preferred Stock in the event that (i) the average of the daily volume-weighted average price of Common Stock over any 10 consecutive trading days is greater than \$1.98 (as adjusted for stock splits, stock dividends and similar transactions) and (ii) there is then an effective registration statement registering under the Securities Act the resale of the shares of Common Stock issuable upon such conversion of Preferred Stock (together, the "Series B Forced Conversion Conditions").

The average daily VWAP requirement of the Series B Forced Conversion Conditions relating to daily volume-weighted average price of our Common Stock has not yet been satisfied. On January 27, 2020, the SEC declared effective the Company's Registration Statement on Form S-3 (File No. 333-235883) registering under the Securities Act the resale of the shares of common stock issuable upon the conversion of Series B Preferred Stock and upon the exercise of December 19, 2019 Warrants.

Each December 19, 2019 Warrant entitles the holder to purchase a share of common stock for an exercise price equal to \$0.99. The December 19, 2019 Warrants are exercisable commencing immediately upon issuance and expire on the date five years after the date of issuance, unless earlier terminated pursuant to the terms of the December 19, 2019 Warrant. If, during the term of the December 19, 2019 Warrants, the Series B Forced Conversion Conditions are met, the Company may deliver notice thereof to the holders of the December 19, 2019 Warrants and, after a 30-day period following such notice, any unexercised December 19, 2019 Warrants will be forfeited. The December 19, 2019 Warrants provide for cashless exercise in the event there is no effective registration statement registering under the Securities Act the resale of the shares of common stock issuable upon exercise of such December 19, 2019 Warrants.

The Securities Purchase Agreement, dated December 19, 2019, includes customary representations, warranties and covenants. In connection with the closing of the offering, the Company paid to the placement agent in the offering a commission of approximately 8.0% of the gross proceeds from the offering and issued to the placement agent and its designees warrants exercisable for an aggregate of 14,211 shares of common stock (the "Series B Placement Agent Warrant"). The terms of the Series B Placement Agent Warrant are the same as those of the Warrants.

Series B Preferred Stock Deemed Dividend, Beneficial Conversion Calculation

After factoring in the relative fair value of the warrants issued in conjunction with the Series B Preferred Stock, the effective conversion price is \$0.03 per share, compared to the market price of \$1.36 per share on the date of issuance. As a result, a \$11,165 beneficial conversion feature was recorded as a deemed dividend in the consolidated statement of operations because the Series A Preferred Stock is immediately convertible, with a credit to additional paid-in capital. The relative fair value of the warrants issued with the Series A Preferred Stock of \$364,355 was recorded as a reduction to the carrying amount of the preferred stock in the consolidated balance sheet. The value of the warrants was determined utilizing the binomial option pricing model using a term of 5 years, a volatility of 118%, a risk-free interest rate of 1.75%, a 0% rate of dividends, and a call multiple of 2.

October 2018 Offering of Common Stock

On October 11, 2018, the Company entered into an underwriting agreement with National Securities Corporation (the "Underwriter"), relating to an underwritten public offering for the issuance and sale of 1,477,750 shares of the Company's common stock, which amount includes the Underwriter's option to purchase up to an additional 192,750 shares of common stock to cover over-allotments. The Underwriter exercised in full its option to purchase the additional over-allotment shares on October 12, 2018. The offering, including the issuance of the shares of common stock sold pursuant to the Underwriter's over-allotment option, closed on October 15, 2018. The net proceeds to the Company from the offering were approximately \$2.7 million, after deducting underwriting discounts and commissions, and other offering expenses. The common stock was offered to the public at \$2.10 per share.

November 2018 Offering of Common Stock

On November 8, 2018, the Company entered into an underwriting agreement with the Underwriter relating to an underwritten public offering for the issuance and sale of 1,385,750 shares of the Company's common stock, which amount includes the Underwriter's option to purchase up to an additional 180,750 shares of common stock to cover over-allotments. The Underwriter exercised in full its option to purchase the additional over-allotment shares on November 9, 2018. The common stock was offered to the public at \$3.90 per share.

Note 8 – Common Stock Options

Stock options are awarded to the Company's employees, consultants and non-employee members of the board of directors under the 2016 Omnibus Incentive Plan and are generally granted with an exercise price equal to the market price of the Company's common stock at the date of grant. The aggregate fair value of these stock options granted by the Company during the year ended December 31, 2019 was determined to be \$2,377,537 using the Black-Scholes-Merton option-pricing model based on the following assumptions: (i) volatility rate of 103% to 124%, (ii) discount rate of 0%, (iii) zero expected dividend yield, and (iv) expected life of 7 to 10 years. A summary of option activity under the Company's stock options as of December 31, 2019, and changes during the year then ended is presented below:

	Number of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)
Balance outstanding at December 31, 2018	1,272,911	\$ 4.56	6.31
Granted	2,257,473	1.13	9.81
Exercised	-	-	-
Forfeited	-	-	-
Cancelled or expired	(81,065)	-	-
Balance outstanding at December 31, 2019	3,449,319	\$ 2.32	8.26
Exercisable at December 31, 2019	756,550	\$ 5.02	5.03

Note 9 – Common Stock Warrants

On July 26, 2019, the Company conducted a private placement offering in which the Company issued 1,736,853 warrants to purchase shares of common stock for an exercise price per share equal to \$1.49. The warrants expire July 26, 2022. The Company also issued to the placement agent and its designees warrants exercisable for an aggregate of 173,685 shares of common stock. The fair value of these warrants was determined to be \$1,993,714 using the Black-Scholes-Merton option-pricing model based on the following assumptions: (i) volatility rate of 111%, (ii) discount rate of 0%, (iii) zero expected dividend yield, and (iv) expected life of 3 years.

On December 11, 2019, the Company conducted a private placement offering in which the Company issued 8,190,225 warrants to purchase shares of common stock for an exercise price per share equal to \$0.87. The warrants expire December 11, 2024. The Company also issued to the placement agent and its designees warrants exercisable for an aggregate of 327,606 shares of common stock. See “December 2019 Offering of Series A Preferred Stock, Common Stock and Warrants” under Note 6.

On December 19, 2019, the Company conducted a private placement offering in which the Company issued 426,316 warrants to purchase shares of common stock for an exercise price per share equal to \$0.99. The warrants expire December 19, 2024. The Company also issued to the placement agent and its designees warrants exercisable for an aggregate of 14,211 shares of common stock. See “December 2019 Offering of Series B Preferred Stock, Common Stock and Warrants” under Note 6.

The following table summarizes all stock warrant activity of the Company for the year ended December 31, 2019:

	<u>Number of Warrants</u>	<u>Weighted Average Exercise Price</u>	<u>Weighted Average Remaining Contractual Term (Years)</u>
Balance outstanding at December 31, 2018	2,628,028	\$ 6.32	3.17
Granted	10,868,896	0.98	3.00
Exercised	-	-	-
Forfeited	-	-	-
Expired	-	-	-
Balance outstanding at December 31, 2019	13,496,924	\$ 2.02	4.07
Exercisable at December 31, 2019	13,496,924	\$ 2.02	4.07

Note 10 – Commitments & Contingencies

Office Lease

Effective January 1, 2015, the Company entered into an office lease agreement with Green Court, LLC, a Michigan limited liability company, for approximately 3,657 rentable square feet of space, for the initial monthly rent of \$5,986, which commenced on January 1, 2015 for an initial term of 60 months. On October 10, 2017 this lease was amended increasing the rentable square feet of space to 3,950 and the monthly rent to \$7,798. On July 16, 2019, the Company exercised its option to extend the lease for an additional 5 years past the initial term originally expiring on December 31, 2019, such that the lease now expires on December 31, 2024.

The Company records the lease asset and lease liability at the present value of lease payments over the lease term. The lease typically do not provide an implicit rate; therefore, the Company uses its estimated incremental borrowing rate at the time of lease commencement to discount the present value of lease payments. The Company's discount rate for operating leases at December 31, 2019 was 10%. Lease expense is recognized on a straight-line basis over the lease term to the extent that collection is considered probable. As a result, the Company has been recognizing rents as they become payable based on the adoption of ASC Topic 842. The weighted-average remaining lease term is 4.92 years.

As of December 31, 2019, the maturities of operating lease liabilities are as follows:

	<u>Operating Lease</u>
2020	\$ 98,790
2021	101,752
2022	104,793
2023	107,954
2024 and beyond	111,192
Total	\$ 524,481
Less: amount representing interest	(115,476)
Present value of future minimum lease payments	409,005
Less: current obligations under leases	66,193
Long-term lease obligations	\$ 342,812

For the years ended December 31, 2019 and 2018, the Company incurred rent expenses of \$105,514 and \$104,805, respectively.

Employment and Consulting Agreements

Francois Michelin – Effective May 12, 2017, the Company entered into an amended and restated employment agreement with Francois Michelin, the Company's Chief Executive Officer and Chairman of the board of directors. The initial term of the employment agreement runs through December 31, 2019 and continues on a year-to-year basis thereafter. The employment agreement provides for an annual base salary that is subject to adjustment at the board of directors' discretion. The annual base salary in effect during the period covered by this Form 10-K was \$355,350. Under the employment agreement, Mr. Michelin is eligible for an annual cash bonus based upon achievement of performance-based objectives established by the board of directors. Pursuant to Mr. Michelin's employment agreement, in connection with the closing of the Company's initial public offering he was granted options to purchase an aggregate 339,270 shares of common stock. The options have a weighted average exercise price of \$4.96 per share of common stock and vest in three equal annual installments beginning on May 12, 2018. Upon termination without cause, any portion of Mr. Michelin's options scheduled to vest within 12 months will automatically vest, and upon termination without cause within 12 months following a change of control, the entire unvested portion of the options will automatically vest. Upon termination for any other reason, the entire unvested portion of the options will terminate.

If Mr. Michelin's employment is terminated by the Company without cause, Mr. Michelin will be entitled to receive 12 months' continuation of his current base salary and a lump sum payment equal to 12 months of continued healthcare coverage (or 24 months' continuation of his current base salary and a lump sum payment equal to 24 months of continued healthcare coverage if such termination occurs within one year following a change in control).

Under his employment agreement, Mr. Michelin is eligible to receive benefits that are substantially similar to those of the Company's other senior executive officers.

On December 27, 2019, the Company entered into an amendment to Mr. Michelin's employment agreement to provide that (i) Mr. Michelin's employment with the Company will continue until terminated under the terms the employment agreements, and (ii) Mr. Michelin will each receive certain payments if he is terminated by the Company without Cause (as defined in the employment agreement amendment) or for Good Reason (as defined in the employment agreement amendment).

Michael Thornton – Effective May 12, 2017, the Company entered into an amended and restated employment agreement with Michael Thornton, the Company's Chief Technology Officer. The initial term of the employment agreement runs through December 31, 2019 and continues on a year-to-year basis thereafter. The employment agreement provides for an annual base salary that is subject to adjustment at the board of directors' discretion. The annual base salary in effect during the period covered by this Form 10-K was \$267,800. Under the employment agreement, Mr. Thornton is eligible for an annual cash bonus based upon achievement of performance-based objectives established by the board of directors. Pursuant to Mr. Thornton's employment agreement, in connection with the closing of the Company's initial public offering he was granted options to purchase an aggregate 345,298 shares of common stock. The options have a weighted average exercise price of \$4.96 per share of common stock and vest in three equal annual installments beginning on May 12, 2018. Upon termination without cause, any portion of Mr. Thornton's option scheduled to vest within 12 months will automatically vest, and upon termination without cause within 12 months following a change of control, the entire unvested portion of the options will automatically vest. Upon termination for any other reason, the entire unvested portion of the options will terminate.

If Mr. Thornton's employment is terminated by the Company without cause, Mr. Thornton will be entitled to receive 12 months' continuation of his current base salary and a lump sum payment equal to 12 months of continued healthcare coverage (or 24 months' continuation of his current base salary and a lump sum payment equal to 24 months of continued healthcare coverage if such termination occurs within one year following a change in control).

Under his employment agreement, Mr. Thornton is eligible to receive benefits that are substantially similar to those of the Company's other senior executive officers.

On December 27, 2019, the Company entered into an amendment to Mr. Thornton's employment agreement to provide that (i) Mr. Thornton's employment with the Company will continue until terminated under the terms the employment agreements, and (ii) Mr. Thornton will each receive certain payments if he is terminated by the Company without Cause (as defined in the employment agreement amendment) or for Good Reason (as defined in the employment agreement amendment).

David Wells – On May 12, 2017, the Company entered into a consulting agreement with StoryCorp Consulting ("StoryCorp"), pursuant to which David Wells provided services to the Company as its Chief Financial Officer. Pursuant to the consulting agreement, the Company paid to StoryCorp a monthly fee of \$9,000, and in May 2018 this monthly fee was increased to \$9,540. Additionally, pursuant to the consulting agreement, the Company granted to Mr. Wells a stock option to purchase 15,000 shares of common stock in connection with the closing of the Company's initial public offering, having an exercise price per share equal to \$5.00 and vesting in twelve equal quarterly installments, and, for so long as the consulting agreement was in place, granted to Mr. Wells a stock option to purchase the same number of shares of common stock with the same terms on each annual anniversary of the date of the consulting agreement. In May 2018, the annual stock option amount was increased and on December 13, 2018, Mr. Wells was granted options to purchase an additional 35,000 shares of common stock.

On May 13, 2019, the Company entered into an employment agreement with David Wells that supersedes the consulting agreement between the Company and StoryCorp. The employment agreement provides for an annual base salary of \$230,000 and eligibility for an annual cash bonus to be paid based on attainment of Company and individual performance objectives to be established by the Company's board of directors (in 2019, the amount of such cash bonus if all goals were achieved would be 30% of the base salary plus base fees paid to StoryCorp under the consulting agreement). The employment agreement also provides for eligibility to receive benefits substantially similar to those of the Company's other senior executive officers.

Pursuant to the employment agreement, on May 13, 2019 Mr. Wells was granted stock options to purchase 56,000 shares of the Company's common stock. The stock options have an exercise price of \$1.38 per share, and vest in three equal annual installments beginning on the first anniversary of the grant date.

Litigation

From time to time the Company may become a party to litigation in the normal course of business. There are currently no legal matters that management believes would have a material effect on the Company's financial position or results of operations.

Note 11 – Income Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets as of December 31, 2019 and 2018 are summarized below.

	2019	2018
Net operating loss carryforward	\$ (8,106,070)	\$ (7,062,038)
Stock based compensation	--	40,671
Fair value of options	378,614	424,368
Total deferred tax assets	(7,727,457)	(6,596,999)
Valuation allowance	\$ 7,727,457	\$ 6,596,999
Net deferred tax asset	\$ -	\$ -

In assessing the potential realization of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the Company attaining future taxable income during the periods in which those temporary differences become deductible. As of December 31, 2019 and 2018, management was unable to determine if it is more likely than not that the Company's deferred tax assets will be realized, and has therefore recorded an appropriate valuation allowance against deferred tax assets at such dates.

The Company has not completed its evaluation of net operating loss ("NOL") utilization limitations under Internal Revenue Code, as amended (the "Code"), Section 382/383, change of ownership rules. If the Company has had a change in ownership, the NOL's would be limited as to the amount that could be utilized each year, or possibly eliminate, based on the Code, as amended.

No federal or state/local tax provision has been provided for the years ended December 31, 2019 and 2018 due to the losses incurred during such periods. Reconciled below is the difference between the income tax rate computed by applying the U.S. federal statutory rate and the effective tax rate for the years ended December 31, 2019 and 2018.

	2019	2018
U.S. federal statutory income tax	-21.00%	-21.00%
State tax, net of federal tax benefit	-5.80%	-5.80%
Stock based compensation	0.00%	0.00%
Change in valuation allowance	26.80%	26.80%
Effective tax rate	0.00%	0.00%

At December 31, 2019, the Company has available net operating loss carryforwards for federal and state income tax purposes of approximately \$28.8 million, which, if not utilized earlier, expire through 2039.

ENDRA Life Sciences Canada Inc., the Company's wholly-owned subsidiary which was incorporated in 2017, is subject to income taxes in the jurisdictions in which it operates, Canada, at a current rate of approximately 26.6 percent for 2019. Significant judgment is required in determining the provision for income tax. There are many transactions and calculations undertaken during the ordinary course of business for which the ultimate tax determination is uncertain. The Company recognizes liabilities for anticipated tax audit issues based on its current understanding of the tax law. Where the final tax outcome of these matters is different from the carrying amounts, such differences will impact the current and deferred tax provisions in the period in which such determination is made.

ENDRA Life Sciences Canada Inc.'s operations were not material for tax purposes as of December 31, 2019 and 2018 and therefore the entity had no significant impact on the year-end 2019 and 2018 tax provision. Generally, all expenses relating to research & development that are incurred in Canada are the responsibility and owned by the United States parent company, since it is the owner of all of the Company's intangibles.

Note 12 – Subsequent Events

Conversion of July 2019 Notes

From time to time subsequent to the period ending December 31, 2019 until the date of this Annual Report, the Company, at the request of holders of certain July 2019 Notes, converted approximately \$493,800 of the July 2019 Notes and issued approximately 331,442 shares of common stock.

Conversion of Series A Preferred Stock and Series B Preferred Stock

From time to time subsequent to the period ending December 31, 2019 until the date of this Annual Report, the Company, at the request of holders of certain shares of Series A Preferred Stock and Series B Preferred Stock, converted an aggregate of 3,872,999 shares of Series A Preferred Stock and 231,736 shares of Series B Preferred Stock, including accrued but unpaid dividends on such shares, into an aggregate of 4,685,181 shares of common stock.

Exercise of Warrants

From time to time subsequent to the period ending December 31, 2019 until the date of this Annual Report, the Company, at the request of holders of certain warrants received in the Series A Preferred Stock transaction, received approximately \$39,238 in proceeds from the exercise of warrants, and issued approximately 45,101 shares of common stock.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this report, management performed, with the participation of our principal executive and principal financial officers, an evaluation of the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC's forms, and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, to allow timely decisions regarding required disclosures. Based on the evaluation, our principal executive and principal financial officers concluded that, as of December 31, 2019, our disclosure controls and procedures were not effective due to a material weakness in internal control over financial reporting, as described below.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining effective internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Internal control over financial reporting is a process designed to provide reasonable assurance to the Company's management and board of directors regarding the reliability of our financial reporting for external purposes in accordance with accounting principles generally accepted in the United States of America.

Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our consolidated financial statements would be prevented or detected. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Therefore, even those systems determined to be effective can only provide reasonable assurance with respect to financial statement preparation and presentation.

Management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. Management identified the following material weakness as of December 31, 2019: insufficient personnel resources within the accounting function to segregate the duties over financial transaction processing and reporting. Because of this material weakness, management concluded that the Company's internal control over financial reporting was not effective as of December 31, 2019. During the year ended December 31, 2019 the Company began drafting certain documents which outline operating procedures which it intends to adopt during the current year. The Company also engaged on a project basis an outside firm with expertise in the area of proper controls and procedures.

To remediate our internal control weakness, management intends to implement the following measures:

- Add sufficient accounting personnel or outside consultants to properly segregate duties and to effect timely, accurate preparation of the financial statements.

- Upon the hiring of additional accounting personnel or outside consultants, develop and maintain adequate written accounting policies and procedures.

The additional hiring is contingent upon our efforts to obtain additional funding and the results of our operations. Management intends to secure funds in the coming fiscal year but provides no assurances that it will be able to do so.

This Annual Report does not include an attestation report of the Company's registered public accounting firm due to a transition period established by rules of the SEC for newly public companies.

Changes in Internal Control of Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders to be filed pursuant to Regulation 14A of the Exchange Act within 120 days after the end of the Company's fiscal year ended December 31, 2019.

Item 11. Executive Compensation

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders to be filed pursuant to Regulation 14A of the Exchange Act within 120 days after the end of the Company's fiscal year ended December 31, 2019.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholders Matters.

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders to be filed pursuant to Regulation 14A of the Exchange Act within 120 days after the end of the Company's fiscal year ended December 31, 2019.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders to be filed pursuant to Regulation 14A of the Exchange Act within 120 days after the end of the Company's fiscal year ended December 31, 2019.

Item 14. Principal Accountant Fees and Services

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders to be filed pursuant to Regulation 14A of the Exchange Act within 120 days after the end of the Company's fiscal year ended December 31, 2019.

PART IV**Item 15. Exhibits, Financial Statements and Schedules**

(a) List of documents filed as part of this report:

1. Financial Statements (see "Financial Statements and Supplementary Data" at Item 8 and incorporated herein by reference)
2. Financial Statement Schedules (Schedules to the Financial Statements have been omitted because the information required to be set forth therein is not applicable or is shown in the accompanying Financial Statements or notes thereto)
3. Exhibits

The following is a list of exhibits filed as part of this Annual Report:

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Filed Herewith	Form	Exhibit	Filing Date
3.1	Fourth Amended and Restated Certificate of Incorporation of the Company		8-K	3.2	05/12/17
3.2	Amended and Restated Bylaws of the Company		S-1	3.4	12/06/16
4.1	Specimen Certificate representing shares of common stock of the Company		S-1	4.1	11/21/16
4.2	Form of Warrant Agreement and Warrant comprising a part of the Company's units issued in its 2017 initial public offering		S-1	4.2	11/21/16
4.3	Form of Underwriters' Warrant issued to certain designees of the underwriters in the Company's 2017 initial public offering		S-1	4.3	11/21/16
4.4	Form of Warrant issued in June 2018 Private Placement		8-K	4.2	07/02/18
4.5	Form of Underwriters' Warrant issued to certain designees of the underwriters in the Company's October 2018 offering		10-Q	4.6	11/05/18
4.6	Form of Convertible Promissory Note issued in July 2019 Private Placement		8-K	4.1	07/29/19
4.7	Form of Warrant issued in July 2019 Private Placement		8-K	4.2	07/29/19
4.8	Certificate of Designations of Series A Convertible Preferred Stock		8-K	4.1	12/11/19
4.9	Form of Warrant issued in December 2019 Series A Convertible Preferred Stock Offering		8-K	4.2	12/11/19
4.10	Certificate of Designations of Series B Convertible Preferred Stock		8-K	4.1	12/26/19
4.11	Form of Warrant issued in December 2019 Series B Convertible Preferred Stock Offering		8-K	4.2	12/26/19
4.12	Description of Securities	X			
10.1	ENDRA Life Sciences Inc. 2016 Omnibus Incentive Plan *		S-1	10.4	12/06/16
10.2	First Amendment to ENDRA Life Sciences Inc. 2016 Omnibus Incentive Plan*		DEF 14A	Appx. A	05/10/18
10.3	Form of Stock Option Award under 2016 Omnibus Incentive Plan*		S-1	10.5	12/06/16
10.4	Form of Restricted Stock Unit Award under 2016 Omnibus Incentive Plan*		S-1	10.6	12/06/16
10.5	Non-Employee Director Compensation Policy*		10-Q	10.1	05/19/19
10.6	Form of Indemnification Agreement by and between the Company and each of its directors and executive officers*		S-1	10.8	11/21/16
10.7	Amended and Restated Employment Agreement, dated May 12, 2017, by and between the Company and Francois Michelon*		8-K	10.1	05/12/17
10.8	First Amendment to Employment Agreement, dated December 27, 2019, by and between the Company and Francois Michelon*		8-K	10.1	12/27/19
10.9	Amended and Restated Employment Agreement, dated May 12, 2017, by and between the Company and Michael Thornton*		8-K	10.2	05/12/17
10.10	First Amendment to Employment Agreement, dated December 27, 2019, by and between the Company and Michael Thornton*		8-K	10.2	12/27/19
10.11	Collaborative Research Agreement, dated April 22, 2016, by and between the Company and General Electric Company		S-1	10.17	11/21/16
10.12	Amendment to Collaborative Research Agreement, dated April 21, 2017, by and between the Company and General Electric Company		S-1	10.21	05/03/17
10.13	Amendment 2 to Collaborative Research Agreement, dated January 30, 2018, by and between the Company and General Electric Company		8-K	10.1	01/30/18

10.14	Amendment 3 to Collaborative Research Agreement, dated January 13, 2020, by and between the Company and General Electric Company	8-K	10.1	01/15/20
10.15	Gross Lease, dated January 1, 2015, between the Company and Green Court LLC	S-1	10.18	11/21/16
10.16	Amendment to Gross Lease, dated October 10, 2017, by and between the Company and Green Court LLC	10-Q	10.2	05/15/18
10.17	Sublicense Agreement, dated August 2, 2007, by and between the Company and Optosonics, Inc.	S-1	10.19	11/21/16
10.18	Amendment to Sublicense Agreement, dated January 18, 2011, by and between the Company and Optosonics, Inc.	S-1	10.20	11/21/16
10.19	Master Services Agreement, dated October 24, 2017, by and between the Company and CriTech Research, Inc.	10-K	10.15	03/20/18
10.20	Consulting Agreement, dated October 31, 2017, by and between the Company and StarFish Product Engineering, Inc.	10-K	10.16	03/20/18
10.21	Form of Securities Purchase Agreement from June 2018 Private Placement, dated June 28, 2018	8-K	10.1	07/02/18
10.22	Form of Registration Rights Agreement from June 2018 Private Placement, dated June 28, 2018	8-K	10.2	07/02/18
10.23	Form of Security Agreement from June 2018 Private Placement, dated June 28, 2018	8-K	10.3	07/02/18
10.24	Employment Agreement, dated May 13, 2019, by and between the Company and David Wells*	10-Q	10.2	05/14/19
10.25	Employment Agreement, dated April 20, 2019, by and between the Company and Renaud Maloberti*	10-Q	10.2	08/08/19
10.26	Form of Securities Purchase Agreement from July 2019 Private Placement, dated July 26, 2019	8-K	10.1	07/29/19
10.27	Form of Registration Rights Agreement from July 2019 Private Placement, dated July 26, 2019	8-K	10.2	07/29/19
10.28	Form of Security Agreement from July 2019 Private Placement, dated July 26, 2019	8-K	10.3	07/29/19
10.29	Form of Securities Purchase Agreement from December 2019 Series A Convertible Preferred Stock Offering, dated December 5, 2019	8-K	10.1	12/11/19
10.30	Form of Registration Rights from December 2019 Series A Convertible Preferred Stock Offering, dated December 5, 2019	8-K	10.2	12/11/19
10.31	Form of Securities Purchase Agreement from December 2019 Series B Convertible Preferred Stock Offering, dated December 19, 2019	8-K	10.1	12/26/19
10.32	Form of Registration Rights from December 2019 Series B Convertible Preferred Stock Offering, dated December 19, 2019	8-K	10.2	12/26/19
21.1	Subsidiaries of the Company			X
23.1	Consent of RBSM LLP, Independent Registered Public Accounting Firm (with respect to Form S-3)			X
23.2	Consent of RBSM LLP, Independent Registered Public Accounting Firm (with respect to Form S-8)			X
24.1	Power of Attorney (included on signature page)			X
31.1	Certification Pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934			X
31.2	Certification Pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934			X
32.1	Certification Pursuant to 18 U.S.C Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			X
101.INS	XBRL Instance Document			X
101.SCH	XBRL Taxonomy Schema			X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase			X
101.DEF	XBRL Taxonomy Extension Definition Linkbase			X
101.LAB	XBRL Taxonomy Extension Label Linkbase			X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase			X

* Indicates management compensatory plan, contract or arrangement.

Item 19. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

ENDRA Life Sciences Inc.

Dated: March 26, 2020

By: /s/ Francois Michelin
Francois Michelin
Chief Executive Officer and Director
(Principal Executive Officer)

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of ENDRA Life Sciences Inc., hereby severally constitute and appoint Francois Michelin our true and lawful attorney, with full power to him to sign for us and in our names in the capacities indicated below, any amendments to this Annual Report on Form 10-K, and generally to do all things in our names and on our behalf in such capacities to enable ENDRA Life Sciences Inc. to comply with the provisions of the Securities Exchange Act of 1934, as amended, and all the requirements of the Securities Exchange Commission.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signatures</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Francois Michelin</u> Francois Michelin	Chief Executive Officer and Director (Principal Executive Officer)	March 26, 2020
<u>/s/ David Wells</u> David Wells	Chief Financial Officer (Principal Financial and Accounting Officer)	March 26, 2020
<u>/s/ Anthony DiGiandomenico</u> Anthony DiGiandomenico	Director	March 26, 2020
<u>/s/ Michael Harsh</u> Michael Harsh	Director	March 26, 2020
<u>/s/ Alexander Tokman</u> Alexander Tokman	Director	March 26, 2020

DESCRIPTION OF ENDRA LIFE SCIENCES INC.'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The following information is a summary of information concerning the securities of ENDRA Life Sciences Inc. ("Company," "we," "our," or "us") and does not purport to be complete. It is subject to and qualified in its entirety by reference to our Fourth Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation"), Amended and Restated Bylaws (the "Bylaws") and Form of Warrant Agreement, as applicable, each of which are incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.12 is a part.

Common Stock

The Certificate of Incorporation authorizes the issuance of 50,000,000 shares of common stock, par value \$0.0001 per share (the "Common Stock"). Our authorized but unissued shares of Common Stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange or automated quotation system on which our securities may be listed or traded.

Voting

Each holder of Common Stock is entitled to one vote for each such share outstanding in the holder's name. No holder of Common Stock is entitled to cumulate votes in voting for directors.

Dividends and Liquidation Rights

The holders of outstanding shares of our Common Stock are entitled to such dividends as may be declared by our board of directors out of funds legally available for such purpose. The shares of our Common Stock are neither redeemable nor convertible. Holders of our Common Stock have no preemptive or subscription rights to purchase any of our securities. In the event of our liquidation, dissolution or winding up, the holders of our Common Stock are entitled to receive pro rata our assets, which are legally available for distribution, after payments of all debts and other liabilities. All of the outstanding shares of our Common Stock are fully paid and non-assessable.

We have never paid any cash dividends on our Common Stock.

Warrants

Form

The warrants were issued as individual warrants to the investors, all of which will be governed by a warrant agreement.

Exercisability

The warrants are exercisable at any time up to the date that is five years after their original issuance. The warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and, at any time a registration statement registering the issuance of the shares of Common Stock underlying the warrants under the Securities Act is effective and available for the issuance of such shares, or an exemption from registration under the Securities Act is available for the issuance of such shares, by payment in full in immediately available funds for the number of shares of Common Stock purchased upon such exercise. If a registration statement registering the issuance of the shares of Common Stock underlying the warrants under the Securities Act is not effective or available and an exemption from registration under the Securities Act is not available for the issuance of such shares, the holder may, in its sole discretion, elect to exercise the warrant through a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of Common Stock determined according to the formula set forth in the warrant. No fractional shares of Common Stock will be issued in connection with the exercise of a warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

Exercise Limitation

A holder does not have the right to exercise any portion of the warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% of the number of shares of our Common Stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon at least 61 days' prior notice from the holder to us.

Exercise Price

The warrants have an exercise price of \$6.25 per share. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our Common Stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Transferability

Subject to applicable laws, the warrants may be offered for sale, sold, transferred or assigned without our consent.

Fundamental Transactions

In the event of a fundamental transaction, as described in the warrants and generally including any reorganization, recapitalization or reclassification of our Common Stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding Common Stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding Common Stock, the holders of the warrants are entitled to receive upon exercise of the warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the warrants immediately prior to such fundamental transaction.

Rights as a Stockholder

Except as otherwise provided in the warrants or by virtue of such holder's ownership of shares of our Common Stock, the holder of a warrant does not have the rights or privileges of a holder of our Common Stock, including any voting rights, until the holder exercises the warrant.

Waivers and Amendments

Subject to certain exceptions, any term of the warrants may be amended or waived with our written consent and the written consent of the holders of at least two-thirds of the then-outstanding warrants.

Authorized Preferred Stock and Anti-Takeover Provisions

Authorized Preferred Stock

The Certificate of Incorporation authorizes us to issue 10,000,000 shares of preferred stock, par value \$0.0001 per share ("Preferred Stock"). Our board of directors has designated 10,000 shares of Preferred Stock as Series A Convertible Preferred Stock and 1,000 shares of Preferred Stock as Series B Convertible Preferred Stock. Our authorized but unissued shares of Preferred Stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange or automated quotation system on which our securities may be listed or traded.

Our board of directors has the authority to issue Preferred Stock in one or more series and to fix the designations, powers, rights, preferences, qualifications, limitations and restrictions thereof. These designations, powers, rights and preferences could include voting rights, dividend rights, dissolution rights, conversion rights, exchange rights, redemption rights, liquidation preferences, and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of Common Stock. The issuance of Preferred Stock could adversely affect the voting power of holders of Common Stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of Preferred Stock could have the effect of delaying, deferring or preventing change in our control or other corporate action.

Anti-Takeover Provisions

The provisions of Delaware law, the Certificate of Incorporation and the Bylaws could have the effect of delaying, deferring or discouraging another person from acquiring control of us. These provisions, which are summarized below, may have the effect of discouraging takeover bids. They are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

We are subject to Section 203 of the Delaware General Corporation Law (the "DGCL"), an anti-takeover law. In general, Section 203 prohibits a Delaware corporation from engaging in any business combination (as defined below) with any interested stockholder (as defined below) for a period of three years following the date that the stockholder became an interested stockholder, unless:

- prior to that date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares of voting stock outstanding (but not the voting stock owned by the interested stockholder) those shares owned by persons who are directors and officers and by excluding employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the time the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines "business combination" to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, lease, exchange, mortgage, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- subject to limited exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

Section 203 generally defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation, or who beneficially owns 15% or more of the outstanding voting stock of the corporation at any time within a three-year period immediately prior to the date of determining whether such person is an interested stockholder, and any entity or person affiliated with or controlling or controlled by any of these entities or persons.

The Certificate of Incorporation and the Bylaws include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of us. Certain of these provisions are summarized in the following paragraphs.

Effects of authorized but unissued Common Stock. One of the effects of the existence of authorized but unissued Common Stock may be to enable our board of directors to make more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, and thereby to protect the continuity of management. If, in the due exercise of its fiduciary obligations, the board of directors were to determine that a takeover proposal was not in our best interest, such shares could be issued by the board of directors without stockholder approval in one or more transactions that might prevent or render more difficult or costly the completion of the takeover transaction by diluting the voting or other rights of the proposed acquirer or insurgent stockholder group, by putting a substantial voting block in institutional or other hands that might undertake to support the position of the incumbent board of directors, by effecting an acquisition that might complicate or preclude the takeover, or otherwise.

Cumulative Voting. The Certificate of Incorporation does not provide for cumulative voting in the election of directors, which would allow holders of less than a majority of the stock to elect some directors.

Director Vacancies. The Certificate of Incorporation provides that all vacancies may be filled only by the affirmative vote of a majority of directors then in office, even if less than a quorum.

Stockholder Action: Special Meeting of Stockholders. The Bylaws provide that stockholders may act by written consent. However, stockholders pursuing an action by written consent will be required to comply with certain notice and record date requirements that are set forth in the DGCL. A special meeting of stockholders may be called by the Chairman of the board of directors, the President, the Chief Executive Officer, or a majority of the board of directors at any time and for any purpose or purposes as shall be stated in the notice of the meeting, or by request of the holders of record of at least 20% of outstanding shares of Common Stock. This provision could prevent stockholders from calling a special meeting because, unless certain significant stockholders were to join with them, they might not obtain the percentage necessary to request the meeting. Therefore, stockholders holding less than 20% of issued and outstanding Common Stock, without the assistance of management, may be unable to propose a vote on any transaction which may delay, defer or prevent a change of control, even if the transaction were in the best interests of our stockholders.

Advance Notice Requirements for Stockholder Proposals and Director Nominations. The Bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as director. In order for any matter to be "properly brought" before a meeting, a stockholder will have to comply with such advance notice procedures and provide us with certain information. The Bylaws allow the presiding officer at a meeting of stockholders to adopt rules and regulations for the conduct of meetings which may have the effect of precluding the conduct of certain business at a meeting if such rules and regulations are not followed. These provisions may also defer, delay or discourage a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to influence or obtain control of us.

Supermajority Voting for Amendments to Our Governing Documents. Any amendment to the Certificate of Incorporation requires the affirmative vote of at least 66 2/3% of the voting power of all shares of our capital stock then outstanding. The Certificate of Incorporation provides that the board of directors is expressly authorized to adopt, amend or repeal the Bylaws and that our stockholders may amend the Bylaws only with the approval of at least 66 2/3% of the voting power of all shares of our capital stock then outstanding.

Choice of Forum. The Certificate of Incorporation provides that, subject to certain exceptions, the Court of Chancery of the State of Delaware will be the exclusive forum for any claim, including any derivative claim, (i) that is based upon a violation of a duty by a current or former director or officer or stockholder in such capacity or (ii) as to which the DGCL, or any other provision of Title 8 of the Delaware Code, confers jurisdiction upon the Court of Chancery.

Subsidiaries of the Registrant

ENDRA Life Sciences Canada Inc. is a corporation formed under the laws of Ontario, Canada in July 2017.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statements of ENDRA Life Sciences Inc. on Form S-3 (File Nos. 333-235883, 333-233466, 333-229090, 333-226917 and 333-226785) of our report dated March 26, 2020, with respect to our audits of the consolidated financial statements of ENDRA Life Sciences Inc. & Subsidiary as of December 31, 2019 and 2018, which is included in this Annual Report on Form 10-K of ENDRA Life Sciences Inc.

/s/ RBSM LLP

RBSM LLP
Henderson, NV
March 26, 2020

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statements of ENDRA Life Sciences Inc. on Form S-8 (File Nos. 333-233178 and 333-218894) of our report dated March 26, 2020, with respect to our audits of the consolidated financial statements of ENDRA Life Sciences Inc. & Subsidiary as of December 31, 2019 and 2018, which is included in this Annual Report on Form 10-K of ENDRA Life Sciences Inc.

/s/ RBSM LLP

RBSM LLP
Henderson, NV
March 26, 2020

**CERTIFICATION OF THE PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Francois Michelin, certify that:

1. I have reviewed this Annual Report on Form 10-K of ENDRA Life Sciences 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(s) 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(s) 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.

Date: March 26, 2020

/s/ Francois Michelin

Name: Francois Michelin

Title: Chief Executive Officer

(Principal Executive Officer)

**CERTIFICATION OF THE PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, David R. Wells, certify that:

1. I have reviewed this Annual Report on Form 10-K of ENDRA Life Sciences 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(s) 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(s) 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.

Date: March 26, 2020

/s/ David Wells

Name: David Wells

Title: Chief Financial Officer

(Principal Financial Officer and Principal Accounting Officer)

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of ENDRA Life Sciences Inc. (the "Company") for the year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Francois Michelin, Chief Executive Officer of the Company, and David Wells, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, to our knowledge that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement required by Section 906 has been provided to ENDRA Life Sciences Inc. and will be retained by ENDRA Life Sciences Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

/s/ Francois Michelin

Name: Francois Michelin
Title: Chief Executive Officer
(Principal Executive Officer)
Date: March 26, 2020

/s/ David Wells

Name: David Wells
Title: Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)
Date: March 26, 2020
