IMAGION BIOSYSTEMS

MagSense™ Technology

A New Clinical Diagnostic Technology for Targeted Early Detection of Cancer

AGM Update

May 2018 ASX:IBX

www.imagionbiosystems.com

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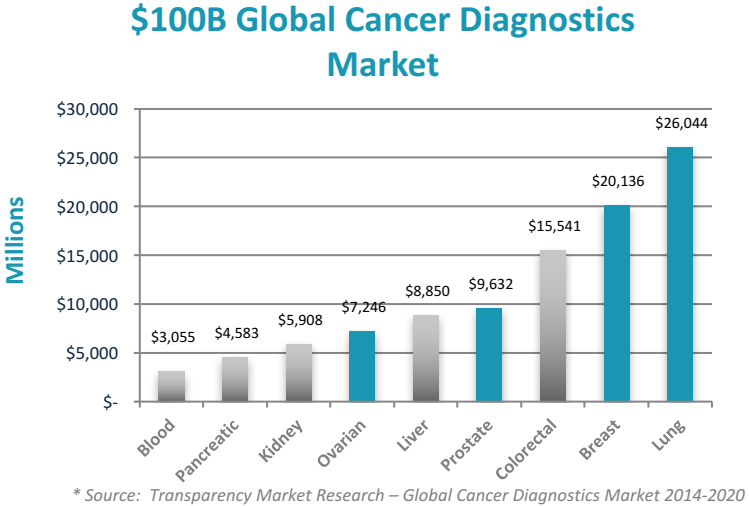
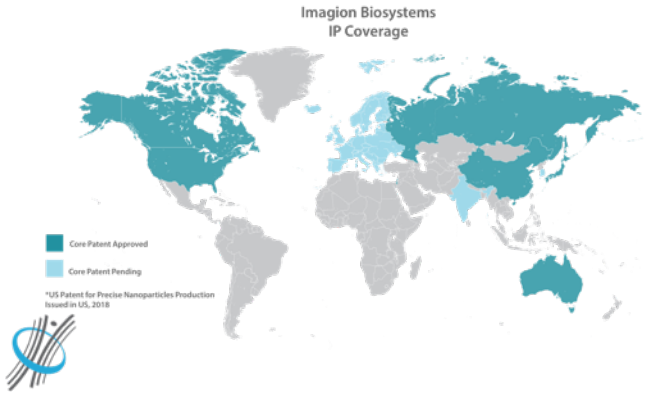
Cancer Diagnostics – A Large Market



** Source: Transparency Market Research – Global Cancer Diagnostics Market 2014-2020*



Cancer diagnostics is a **$100 billion market** growing at a CAGR of >7%* with imaging techniques accounting for the largest portion. ***Our MagSense technology is a new way of functional imaging that can be used for many types of cancer.***

$50B addressable market in diagnosis of cancers in our product pipeline.

Our patents are already issued, or are pending, in all the major markets making the lions share of the global markets available for commercialization.

Patents are valid through 2029.

The Opportunity in Cancer Diagnostics

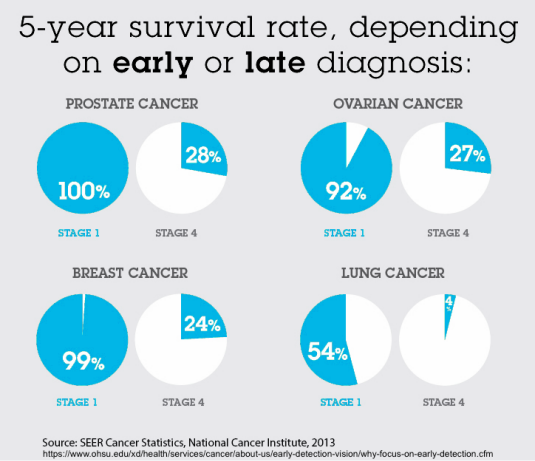
MARKET DRIVERS

Cancer continues to be one of the leading causes of mortality globally despite technical advances in science and medicine made in the last 150 years. The consensus within the medical community and supported by the SEER Cancer Statistics is that ***more lives could be saved if cancer could be detected earlier***.

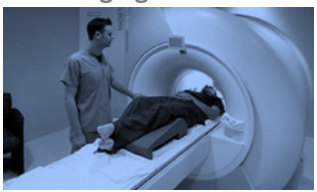
UNMET MEDICAL NEED

Many cancers are asymptomatic until late stage disease has developed. Imaging methods can not differentiate benign from malignant tumors and are not sensitive enough to detect small tumors. Pathological assessment requires an invasive procedure. Imagion's technology will:

- **Minimize need for surgical or biopsy procedures**
- **Identify molecular phenotypes which can drive therapy selection**
- **Identify tumors at an earlier stage and reduce risk of metastases**

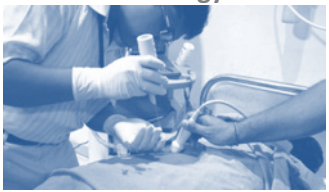


Imaging Methods



Non-specific, Lack Sensitivity

Pathology

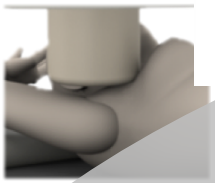


Require Invasive Procedures

Significant Achievements in 2017/2018

- ✓ Successful initial public offering (**ASX:IBX**) raised A$12M, funding initial stages of translational development of MagSense™ technology in preparation for first-in-human studies.
- ✓ Contract manufacturers Starfish Medical and ChemConnections engaged to assist with development of the MagSense technology for clinical testing.
- ✓ Communications with U.S. FDA provided green light to proceed with proposed clinical program.
- ✓ Leading cancer institute MD Anderson converts remaining sponsored research fees to equity in IBX, sending strong signal of support and value of the technology.
- ✓ Company relocation to San Diego, one of world's largest biotech hubs, enables attraction of top talent and acceleration of business.

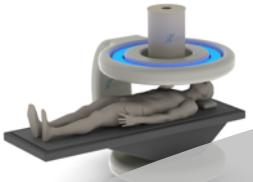
Business Strategy to Create Value



Staging Breast Cancer

Shortest Path to Clinical Proof

$500M



Primary Tumour Detection

Breast, Prostate, Lung, and Ovarian

$5B

Doctors Office

Ubiquitous like Ultrasound

$10'sB

Detection and Therapy

Nanoparticle is both detection and delivery of therapy

> $100B

Next Steps and News Flow

Q3 2018	• Initiate pilot manufacture of GLP/cGMP compliant HER2 nanoparticle formulation for use in tox/safety studies.
Q4 2018	• Completion of preclinical toxicology study to demonstrate safety before First-in-Human studies.
Q4 2018	• Manufacture cGMP batch of HER2 nanoparticles for use in First-in-Human study.
Q1 2019	• Begin patient recruitment for *ex vivo* research study at MD Anderson.
H1 2019	• Build instrument for use with human patients.
H2 2019	• Initiate pivotal clinical study to support regulatory submission for staging HER2 breast cancer.

Business Fundamentals Summary

Valuation Factors	IBX's Business
Uniqueness of the device and extent of disruption of current medical practice	MagSense is **more sensitive** than current medical imaging and able to differentiate benign from malignant tumors
Strength of intellectual property	IBX **owns and controls the IP** for medical applications
Extent of clinical evidence reducing technology risk	Milestones drive to **reduce technical risk** and achieve clinical utility
Opportunity for revenue and profitability	The **markets are large** and even small market share achieves sizeable revenue and growth potential

*** STRONG BOARD AND MANAGEMENT TEAM**

*** FOCUSED ON MINIMIZING TECHNICAL RISK**

*** CLEAR PATH TO COMMERCIAL MARKETS**

*** SOUND FINANCIALS**

- Cash at 31 March 2018 – $5.5M
- Quarterly cash burn projection – $1.25M plus project outsourcing costs
- Clean balance sheet – No debt; No convertible notes or warrants

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Supplemental Material

Investment Highlights

$100 Billion

Annual global spending on cancer diagnosis in imaging and pathology.

8 Patents

Core technology covered in major markets through to 2029.

"Printer & Ink" model

Product includes both the instrument and a diagnostic consumable.

$2 Billion

Addressable markets for first cancer targets:
breast, prostate, ovarian.

Additional targets being explored.

Platform Technology

Not limited to initial targets or cancer diagnostics.

Other potential opportunities include theranostics and reagents.

Key Collaborations

Pre-clinical partnerships already under way with pre-eminent medical research institutes.

Strong Board and Management

Robert Proulx
Chairman & CEO

- Operationally oriented executive
- 25 years experience in life science and medical device product development and commercialization

Bronwyn Le Grice
Non Exec Director

- 15 years of experience in healthcare and technology markets spanning venture capital, capital raising and corporate governance for
- Currently Managing Director of ANDHealth

Michael Harsh
Non Exec Director

- Former VP & CTO of GE Healthcare's Medical Imaging Business
- 35 years experience in engineering and product development of medical imaging technologies including MRI, X-ray, and ultra sound

John Hazle PhD
Non Exec Director

- Board certified for both therapeutic and diagnostic medical physics
- 30 years experience in pre-clinical and clinical medical imaging research
- Chairs Cancer Research programs at UT Graduate School of Biomedical Sciences

Jovanka Naumoska
Corp Secretary

- Australian attorney with expertise in regulatory compliance, corporate, governance and risk, general and commercial liability, & intellectual property

Mark Van Asten
Non Exec Director

- Australian business executive with strong background in diagnostics and healthcare
- 25 years experience in market development and commercializing diagnostic products

Brian Conn
CFO

- Financial executive with strong background in early and growth stage biotech
- 25 years experience in raising both public and private capital and M&A activities

Farideh Bischoff
VP Clinical Research

- Proven track record in oncology diagnostic product development and clinical research
- Expertise in the fields of rare cancer cell detection, molecular cytogenetics, diagnostic assay development and validation.

Giulio Paciotti PhD
VP R&D

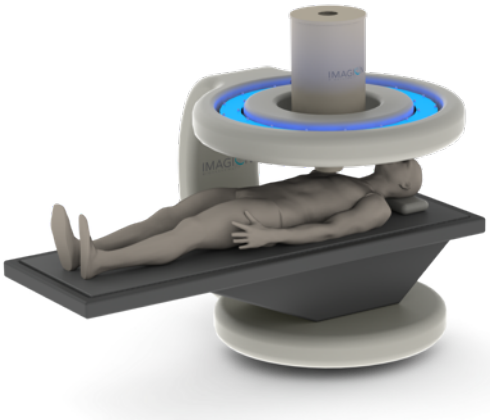
- Former CSO at CytImmune Sciences developer of gold nanoparticle therapeutic
- 25 years experience in tumor biology research and cancer related product development

David Ludvigson
Non Exec Director

- Financial and operating executive
- 35 years experience in pharma, medical device and computer products
- Significant experience in corporate strategy, M&A, and financing

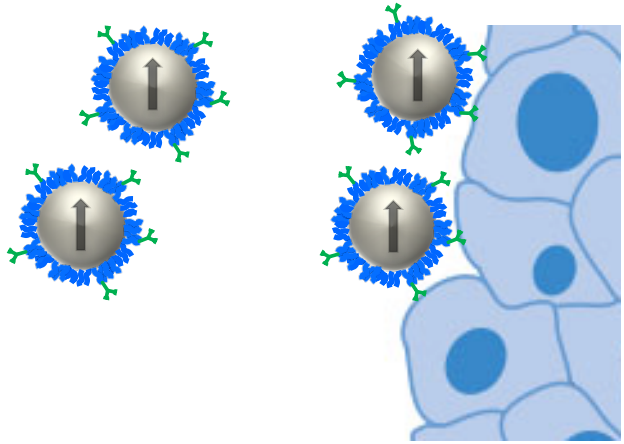
How MagSense Technology Works

- A low dose of magnetic nanoparticles is given by intravenous injection and allowed to circulate and find the tumor.
- The patent is positioned under the detector for measurement to see if any particles are detectable.
- Only particles attached to the cancer cells will be detectable.



Rendering of MagSense SQD Clinical Instrument

Human studies have not yet been conducted

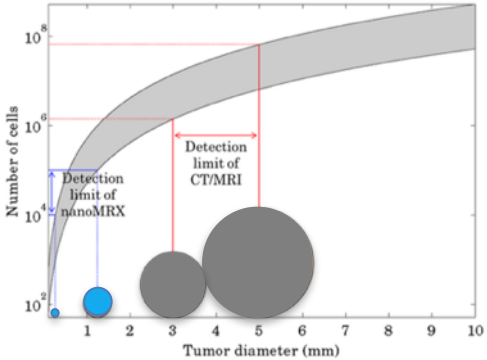


- All nanoparticles lose their magnetization (“relax”) after a low magnetic field is applied.
- The bio-specific antibodies on the nanoparticles cause the particles to stick to the specific tumor being targeted.
- A nanoparticle attached to a bio-marked cancer cell will relax more slowly than particles in circulation.
- Imagion’s ultra-sensitive detectors are able to locate and quantify the relaxation of only the attached nanoparticles.

How MagSense Technology Compares

More Sensitive and Specific

- MagSense technology is more sensitive than conventional imaging methods which will allow tumors to be detected and treated earlier.
- Current imaging methods can not differentiate benign from malignant lesions but MagSense nanoparticles locate specific tumor phenotypes.



Graphic courtesy MD Anderson Cancer Center Dept. Imaging Physics

Reduces Patient Risks

- MagSense technology uses a very low applied magnetic field; orders of magnitude less than MRI.
- Unlike PET or X-ray which expose patients to radioactivity or harmful X-rays, Imagion's nanoparticles are biologically safe and applied at a non-toxic low dose.

Costs Less to Make and Install

- MagSense instrument will **cost less** than conventional MRI or CT technologies (~$500K)
- Does not require expensive shielded environment (eliminates ~ $1M in installation costs)

Method	MagSense Magnetic Relaxometry	MRI Magnetic Resonance Imaging	PET Positron Emission Tomography	Ultrasound	X-Ray/CT
Detection Threshold	< 10 million cells	10's Millions of cells	NA	Billions of cells	NA
Quantitative	Yes	Yes	No	No	No
Specificity	Yes	No	No	No	No

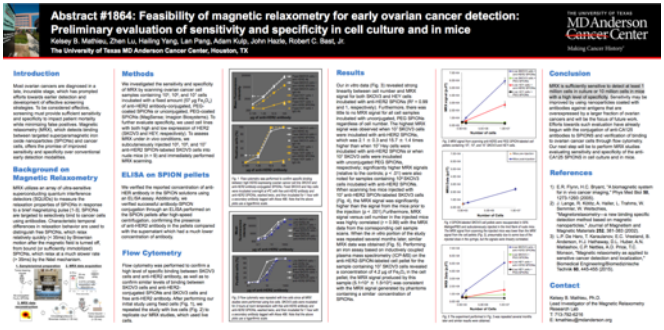
Technology Development

Key Scientific Collaborators

- MD Anderson Cancer Center's Department of Imaging Physics has a ***Magnetic Relaxometry Research Laboratory*** helping to validate the technology.
- Experts in computational biology of magnetic fields at UCSD are assisting with technology development.

Pre-Clinical Experimental Results

- Results of specificity of a HER2 targeting nanoparticle were reported at the 2016 San Antonio Breast Cancer Symposium.
- Preliminary results of an ovarian cancer targeting nanoparticle were reported by MD Anderson at the 2017 American Association for Cancer Research meeting.



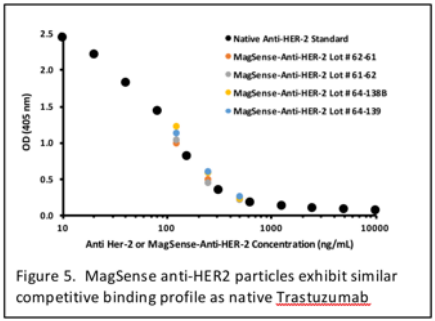


Figure 5. MagSense anti-HER2 particles exhibit similar competitive binding profile as native Trastuzumab

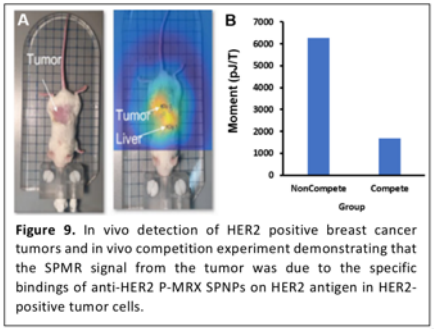
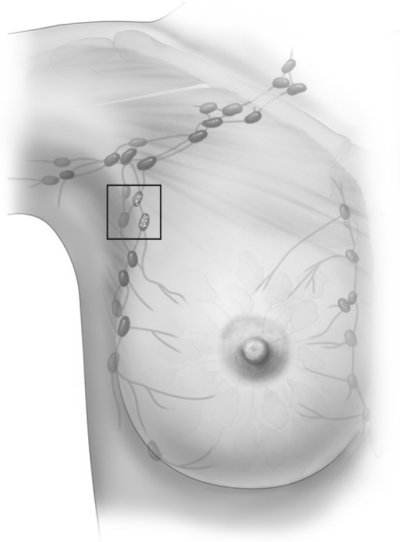


Figure 9. In vivo detection of HER2 positive breast cancer tumors and in vivo competition experiment demonstrating that the SPMR signal from the tumor was due to the specific bindings of anti-HER2 P-MRX SPNPs on HER2 antigen in HER2-positive tumor cells.

Breast Cancer Program

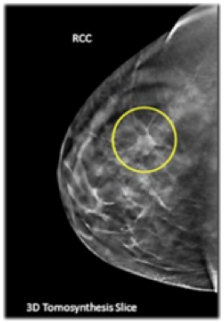
Staging HER2 Breast Cancer

- 20-25% of breast cancers are HER2 positive.
- Following primary diagnosis patients are assessed for metastases by Sentinel Lymph Node Biopsy (SLNB).
- 50-70% of patients are negative which results in unnecessary lymphadenectomy and lymphedema.
- *The MagSense HER2 test is intended to non-invasively detect if there has been metastatic spread* to the lymph nodes, eliminating unnecessary surgeries and the resultant morbidity.



Primary Diagnosis of Invasive Breast Cancer (IBC)

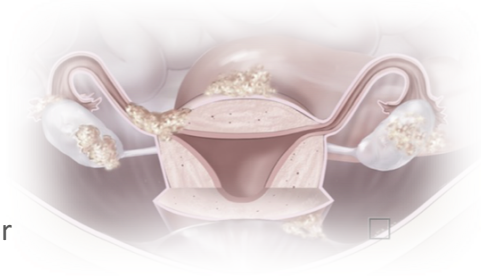
- More than 500,000 women die from invasive breast cancer each year despite the pervasive use of mammograms for screening.
- Mammograms cannot differentiate benign from malignant tumors resulting in high false positives causing unnecessary biopsy procedures.*
- *The MagSense IBC test should determine if a tumor is a malignant form of breast cancer.*



* JAMA 2018 V.319, No. 17, p. 1814

Ovarian Cancer Program

"The Silent Killer"

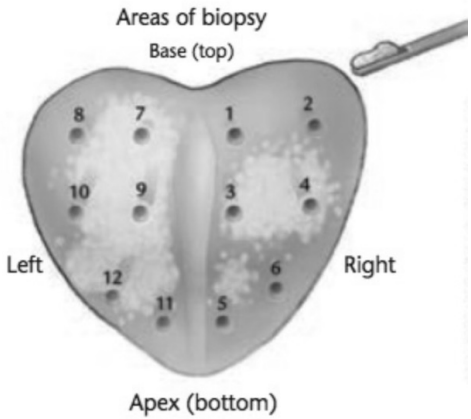


- If detected at an early stage (I or II), cytoreductive surgery and conventional chemotherapy can cure 70-90% of patients.
- Only 20-25% of ovarian cancers are diagnosed in early stage I-II because ovarian cancer is typically asymptomatic, making it the silent killer.
- Elevated levels of the biomarker CA 125 in the blood is an indicator of risk but indeterminate since it is not specific for ovarian cancer.
- Transvaginal ultrasound (TVU) is used to confirm tumor presence before biopsy or surgery but TVU is not sensitive, requiring billions of cells to be visible.
- This results in "watchful waiting" with false negative results for many patients while the tumor continues to grow undetected by TVU.
- The MagSense OC test is intended to be used as a confirmatory test for patients with elevated CA 125 and other risk factors.
- Pre-clinical studies suggest *magnetic relaxometry could detect as few as one million cells – three orders of magnitude more sensitive than TVU*.

Prostate Cancer Program

Minimizing Need for Prostate Biopsies

- Prostate cancer is the second most frequent form of cancer found in men with approximately one in seven men being diagnosed with prostate cancer during their lifetime.
- Early prostate cancer is largely asymptomatic and most prostate cancer is identified through screening with PSA blood-based testing and/or a digital rectal exam.
- A PSA test is not diagnostic with only 25% of men with PSA elevated above the 4ng/ml cutoff being positive for cancer.
- 15% of men undergoing PSA screening over 10 years will have at least one false-positive result.*
- More that one million prostate biopsies are done annually in the US – expensive and painful.
- There is significant over diagnosis and most men with a low-risk prostate cancer undergo unnecessary active treatment.*
- *The MagSense Prostate Cancer test is expected to be used as an alternative to biopsies and to reduce over diagnosis and treatment*.



* *JAMA Intern Med.* Published online May 8, 2018 – USPSTF Prostate Cancer Screening Recommendation

Mitigating Risks

Risk Factors	Operational Plan
• Clinical studies and regulatory review will be required of MagSense technology before commercialization.	✓ MagSense technology will be regulated as a medical device and not a drug. *Clinical studies will not require large numbers of patients or lengthy study periods*.
• The nanoparticle formulation will have to be tested for safety before being tested in humans.	✓ All the components of the nanoparticle test formulation have already been approved for use in humans by other manufacturers for different purposes. *The safety profile of the MagSense test reagent is low risk* as reviewed by the FDA.
• The clinical instrument must be designed and tested for human diagnostic use.	✓ Imagion's *instrument uses proven technologies* that have already been employed in other clinical medical devices.