

Thunder Bay Regional Research Institute

2015 -2016 Annual Report Summary



Thunder Bay Regional
Research Institute

Bringing
Discovery
to Life

Mettre la
découverte
au monde

Our Last Five Years in Review

With this Annual Report we close the final chapter of the Thunder Bay Regional Research Institute's 2012-2016 Strategic Plan. The plan outlined three goals in our mission to create a patient-centric research program that would benefit the residents of Northwestern Ontario and create new and innovative diagnostic techniques to benefit the world. We are pleased to announce that we've been successful in that mission.

Our accomplishments include (to name just a few) the installation and commissioning of our new cyclotron, the formation of two spin-off companies (XLV Diagnostics Inc. and Radialis), our rise to 35th in the Top 40 Research Hospitals in Canada, and an ever-expanding roster of clinicians who are partnering with us to provide better care for our patients.

Creating a research institute is an extremely difficult proposition, especially when you are building something new that doesn't fit the traditional mould. What we've accomplished so far is astounding. We have formed a successful research hub outside of a major metropolitan area, focused on innovative ways to collaborate and build capacity, and – most importantly – remained patient-centric. Of course, none of this would be possible without our numerous funding partners, whom we have listed here. The next Strategic Plan will guide us over the next five years as we build upon these successes.

To read our full Annual Report 2015/2016, please view it online at:
www.TBRRI.com/2015-2016AnnualReport

Funders and Partners

GOVERNMENT



AHSCS



ACADEMICS



NOT FOR PROFIT

MaRS Innovation



INDUSTRY



TBRRI Scientists

Naana Afua Jumah, MD, BSc, DPhil, FRCSC

Obstetrician
Gynaecologist, Thunder Bay Regional Health Sciences Centre
Clinician Scientist, Thunder Bay Regional Research Institute

Assistant Professor,
Northern Ontario School of Medicine

Alla Reznik, Ph.D.

Canada Research Chair in Physics of Medical Imaging and Associate Professor, Physics Department, Lakehead University

Senior Scientist, TBRRI
New materials, notably lead oxide and amorphous selenium, for x-ray and PET detectors in medical imaging

Christopher Phenix, Ph.D.

Adjunct Professor, Lakehead University
Assistant Professor in Medical Sciences Division at NOSM

Assistant Professor at the University of Saskatchewan

Probes to image enzymatic biomarker activity and molecular imaging to investigate Herceptin resistance

Ingeborg Zehbe, PhD, DSc

Lakehead University/ TBRRI Research Chair
Senior Scientist TBRRI
Associate Professor, Northern Ontario School of Medicine

Aspects of virus-induced cancer: basic research, anti-cancer therapeutics and prevention & screening

Jane Lawrence-Dewar, Ph.D.

Adjunct Professor, Lakehead University

Applies imaging to understand changes in the brain following injury or disease

Laura Curiel, Ph.D., P.Eng

Assistant Professor, Lakehead University
Development of guidance technology for non-invasive treatment of uterine fibroids, cervical cancer, and prostate cancer with high intensity focused ultrasound (HIFU)

Lily Wu, Ph.D.

Professor, Lakehead University

Effectiveness of SMG-08 in treatment of hypertension and development of labelled methylglyoxal molecule as biomarker of diabetes

Mitchell Albert, Ph.D.

Lakehead University/ TBRRI Research Chair,
Director, MR Research Program, TBRRI

Professor of Chemistry, Lakehead University
Adjunct Professor of Biology, Biotechnology, Health Sciences and Physics, Lakehead University

Hyperpolarized Xenon Functional MRI of the brain in patients with Alzheimer's Disease

Hyperpolarized Xenon Biosensor MR Molecular Imaging in animals models of Alzheimer's Disease
Inert Fluorinated Gas MR Imaging of the lungs in patients with Pulmonary Disease

Samuel Pichardo, Ph.D.

Adjunct Professor, Lakehead University

Clinical trials and development of guidance technology for high intensity focused ultrasound (HIFU) treatment of uterine fibroids, combination of HIFU with radiotherapy, new applications of HIFU for pediatrics and ultrasound transducer technology
Affiliated Scientists

Boguslaw Tomanek, Ph.D.

Associate Professor, Radiation Therapy Degree Program, Department of Oncology, University of Alberta

Multi-model molecular imaging and gradient-free MRI

Affiliated Scientist located at University of Alberta

Oleg Rubel, Ph.D.

Investigation of material properties of selenium and development of new piezoelectric material for HIFU
Affiliated Scientist located at McMaster University

Message from the Chair

OUR IMPACT ON NORTHWESTERN ONTARIO



"Why is having a research program in Thunder Bay important?"

For those of us involved in the Thunder Bay Regional Research Institute, the impact of local health research is obvious: It helps

healthier, wealthier, and smarter.

Our new cyclotron has become a symbol of our success to date. Who could have even imagined 10 years ago that we would be one of four hospitals in Canada with this level of incredibly useful technology? Being able to create our own medical imaging isotopes for research and patient care will eliminate delays due to shipping from southern Ontario. We are already seeing new probe development and international partnerships; we will soon see new economic benefits to the community. We have many people to thank, including our visionary funding partners who helped us get here.

Local research continued to have an impact in many ways in 2015. It is helping us improve care and access to health care for Indigenous peoples living in Northwestern Ontario, overcoming distance, language, culture, and other barriers. Clinical trials is another area of advancement. We have amalgamated the Clinical Trials program and the Clinical Research program to create the new Clinical Research Services Department, which will help strengthen our competencies and make clinical trials more accessible to patients. The medical device manufacturing industry we are helping to develop, the research opportunities we provide for students at Lakehead University, the Northern Ontario School of Medicine, and Confederation College as well as students from around the world, and the jobs we have created – these are just a few examples of how we have helped the region. We should all be proud of our role.

On behalf of the Board, I welcome our new CEO, Jean Bartkowiak. We look forward to working closely with him to develop our new Strategic Plan as we move forward into the next five years.

gary Polonsky

Dr. Gary Polonsky
Chair

Message from the CEO

LOOKING FORWARD TO THE NEXT FIVE YEARS



Our research teams have concluded a rather ambitious set of objectives – and, I may add, we've been quite successful. In our Strategic Plan 2012-2016 we implemented most of our targets including the installation of the cyclotron,

enabling clinical research, and creating potential value through spin-off companies including XLV Diagnostics Inc. and most recently Dr. Alla Reznik's Radialis Inc.

Our scientists have outpaced our goals in several areas. Our Research Institute is now recognized as a leader in several fields including high-intensity focused ultrasound (HIFU) and X-ray detector development. We are also supporting a growing clinical research cluster that is providing solutions to local health care challenges – solutions that often have global applications.

These accomplishments are thanks to the strong vision of our past CEOs, Scientific Directors, Scientists, and of course our staff. We've fostered a collaborative research environment that extends internationally, but begins with Lakehead University and the Northern Ontario School of Medicine. Our Research Institute is part of an academic health sciences centre that allows both the cross-pollination of ideas and a population base large enough to sustain a strong research program. Working together with academics, clinicians, industry partners, and our funding agencies has helped us develop a truly patient-centred research program that is unique to Northwestern Ontario.

I would like to take this opportunity to thank Dr. Bill McCready who served as Interim CEO before my arrival. His effective leadership and dedication to patient-centred research helped guide us across the finish line of our Strategic Plan 2012-2016.

Looking ahead, we are developing a new Strategic Plan that will be closely aligned with the Directions of the Thunder Bay Regional Health Sciences Centre's Strategic Plan 2020 – a natural alignment for a program that aims to enable local research.

I'm excited to see where the next five years will take us...

Jean Bartkowiak

Jean Bartkowiak
CEO

NEXT WAVE 2012-2016 PATIENT

MISSION:

To discover, translate through clinical trials, and bring to market advances in the prevention, diagnosis and treatment of disease

VISION:

Internationally recognized for patient-centred research focused on medical imaging

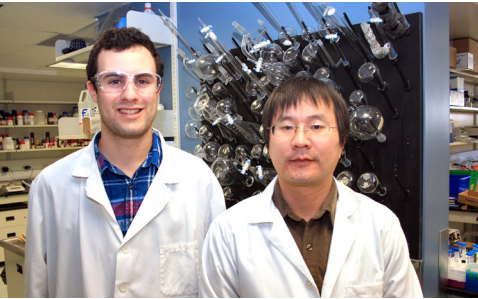
VALUES:

Patient-centredness
Integrity
Excellence
Respect

Goal 1 Impact Through Excellence in Imaging

- Focus on detectors, specialized MRI technology, molecular probes, and imaging guidance.
- Recruit and develop critical mass of internationally excellent scientists and trainees.
- Facilitate collaborations to increase success in scientific discovery, leading to first-in-patient trials and ultimately widespread distribution.

Visit our website at www.tbrri.com to read more about the following successes.



PET Molecular Imaging Laboratory Works Towards Cutting-Edge Diagnosis of Parkinson's Disease

We are one of the few research institutes in the world using radiolabelled probes and PET imaging to help find a definitive diagnostic tool for Parkinson's disease.

[MORE ONLINE](#)



Dr. Pichardo Collaborates with SickKids to Develop New MRgHIFU Technique

Dr. Samuel Pichardo is working with SickKids to develop a non-invasive, MRI-guided HIFU treatment method to reduce the likelihood and the severity of brain injury in premature babies due to intraventricular hemorrhage.

[MORE ONLINE](#)

Goal 2

Enabling of Research Strategic to TBRHSC

- Facilitate clinical research through an accessible, well-managed, and sustainable infrastructure.
- Encourage emergence of research champions to grow culture of research.
- Enable clinical trials and clinical research in TBRHSC priority areas.

Please visit www.tbrri.com to read the full versions of these stories about recent activities in this area.



Clinician Researchers + NOAMA Grants + Research Institutes Support = Better Patient Care

Our Research Institute is supporting the research of clinicians, many of whom receive NOAMA grants to pursue patient-centric research throughout Northwestern Ontario

[MORE ONLINE](#)



ACCSS Research Finds New Ways to Increase Cervical Cancer Screening Among Indigenous Women

Dr. Ingeborg Zehbe and a team of over a dozen other health care professionals investigated the reasons behind high cervical cancer rates among Indigenous women and ways to overcome those challenges.

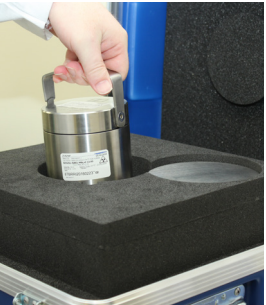
[MORE ONLINE](#)

Goal 3

Economic Growth and Sustainability

- Create research and business jobs in Northwestern Ontario.
- Develop clinical trials, cyclotron, and other business ventures to reinvest in research.
- Partner with the Thunder Bay Regional Health Sciences Foundation in research fundraising.
- Create value from intellectual property through spin-off companies and licenses.

The stories below provide examples of our commitment in action. Visit the full version at www.tbrri.com.



Cyclotron Ships First Isotopes

A year almost to the day after the cyclotron was lowered into its bunker, we shipped our first radioisotopes, gearing up to become a producer of medical isotopes locally, nationally, and perhaps internationally.

[MORE ONLINE](#)



Introducing a Second Spin-Off Company: Radialis Medical Inc.

Radialis, which plans to market positron-emission mammography units built in Thunder Bay, is another one of the Research Institute's commercialization success stories in the making.

[MORE ONLINE](#)

2015-2016 Measures of Scientific Excellence



A message from the Thunder Bay Regional Health Sciences Foundation

EXPANDING OUR REACH

Innovative Research Conducted in Thunder Bay Provides Opportunity to Seek Philanthropic Support Beyond Northwestern Ontario

Scientists at the Thunder Bay Regional Research Institute are tackling big issues like cervical cancer screening, rehabilitation after stroke, and advanced techniques for cancer treatment.

They do not confine their work to Northwestern Ontario; although, certainly, their work is very much focused around the health care issues faced by the population here.

However, the innovative and ground-breaking work happening at our Research Institute has the ability to transform care across the world. Indeed, people in sub-Saharan Africa, Finland, or even China may benefit from the technology developed in Northwestern Ontario.

The Thunder Bay Regional Health Sciences Foundation recognizes the opportunity to engage with prospective donors outside of Northwestern Ontario to fund this revolutionary research. In February, with an enthusiastic and well-connected Board of Directors, an event was held in Toronto to showcase the tremendous work being done in Thunder Bay and provide an opportunity for continued discussion of philanthropic support. It was just the first of many discussions to be held with people outside of Northwestern Ontario to enable donations directly supporting research.

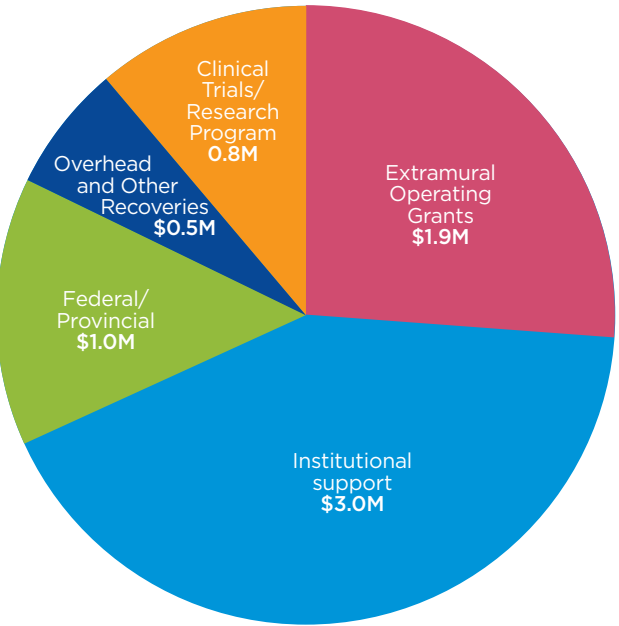
Research is the embodiment of hope. While geographic borders may distinguish where research takes place, they cannot contain hope. The Health Sciences Foundation, through the commitment of donors worldwide, will ensure that hope continues to flourish.



2015-2016 Financials

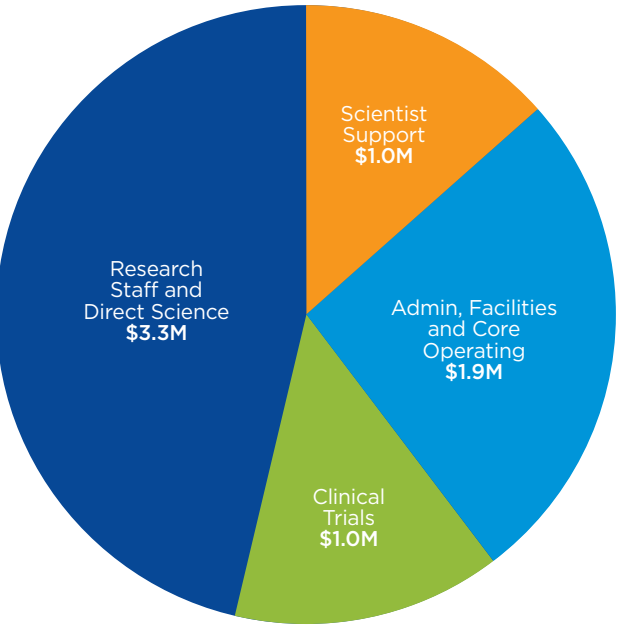
REVENUE SOURCES

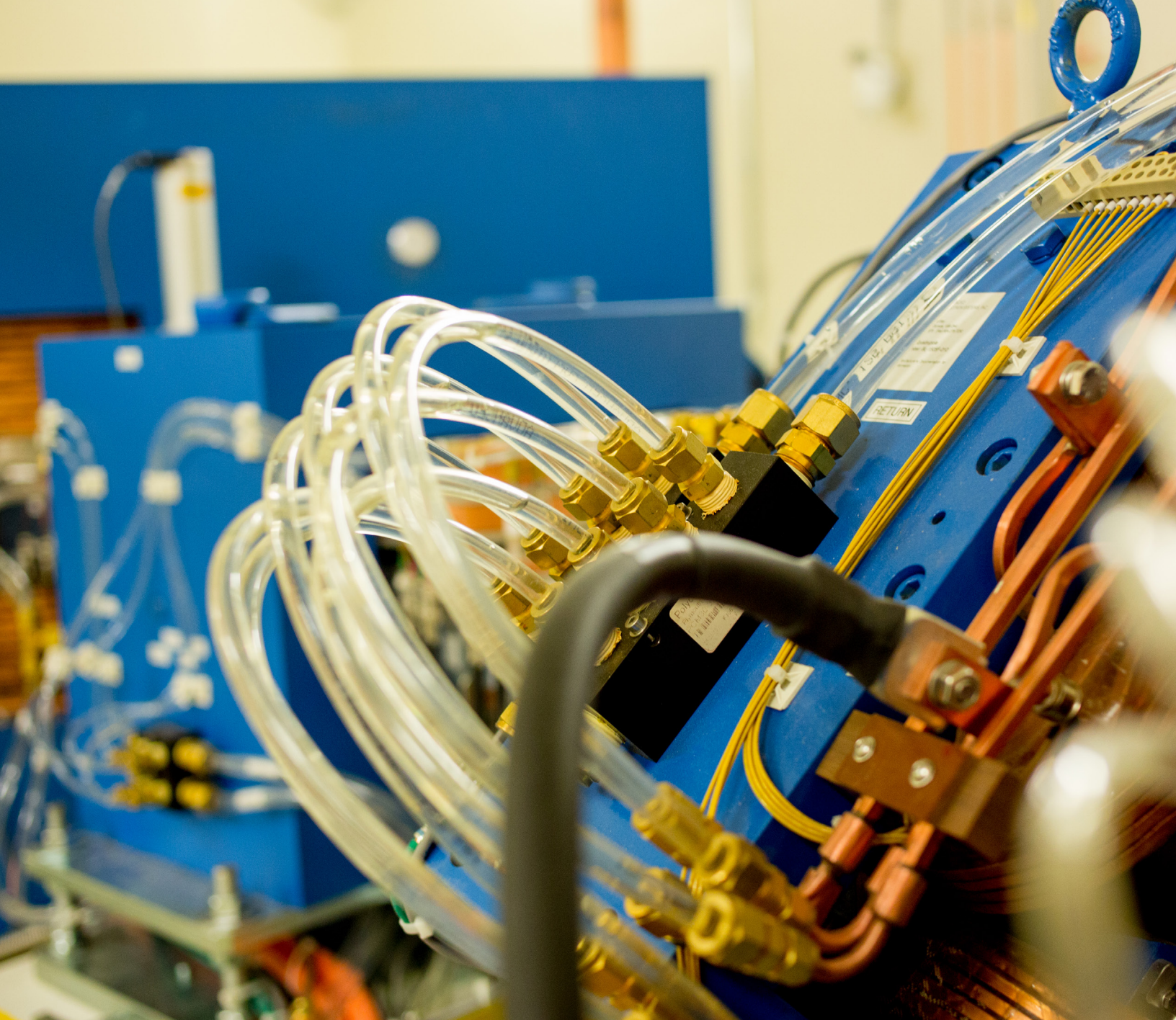
Total = \$7.2M



EXPENSES

Total = \$7.2M





**Thunder Bay Regional
Research Institute**

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www.tbrii.com

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Thunder Bay Regional Health Sciences Centre is a leader in Patient and Family Centred Care and a research and teaching hospital proudly affiliated with **Lakehead University, the Northern Ontario School of Medicine and Confederation College.**

Le Centre régional des sciences de la santé de Thunder Bay, un hôpital d'enseignement et de recherche, est reconnu comme un leader dans la prestation de soins et de services aux patients et aux familles et est fier de son affiliation à **l'université Lakehead, à l'École de médecine du Nord de l'Ontario et au collège Confédération.**