



Thunder Bay Regional
Health Research Institute

2020-2021 Annual Report Summary

Bringing
Discovery
to Life

Donner
vie à la
découverte



Thunder Bay Regional
Health Research
Institute

Message from the CEO and Board Chair



This year posed challenges in The areas of research and science. At Thunder Bay Regional Health Research Institute our team persevered and pushed through several key and important projects that will not only advance patient care but play a significant part in the ongoing efforts for the medical and scientific community to learn more as a whole.

Here are just a few of the amazing projects undertaken at TBRHRI this past year.

- Dr. Mitchell Albert and his team are currently developing HP 129Xe perfusion MRI technique. It holds great potential in detecting neurodegenerative diseases at an early stage, as well as to be a viable fMRI tool that will help study neuroactivities.
- Dr. Alla Reznik is currently leading clinical trials with the Low-Dose Positron Emission Mammography system in the Princess Margaret Cancer Centre in Toronto. So far, the first clinical results have been

very encouraging: her system was capable of detecting not only small cancers (including non-invasive ductal cancers, which are very poorly identified commonly), but also inflammatory processes in the breast that were obscured when observed with other devices.

- Dr. Michael Campbell and his team's research in my is focused on the development of new methodologies and tools that allow easier and less costly access to, and utilization of, radionuclides for research, in industry and health care.
- Dr. Ingeborg Zehbe is focused on developing a personalized anti-cancer treatment targeting an HPV oncoprotein, called E6.
- Dr. Jinqiang Hou and his group aims to design and prepare novel therapeutic and diagnostic tools. The potential impacts include early diagnosis and management of diseases. This will improve the quality of life of many people if the diseases are detected earlier, treated sooner, and effectively monitored.
- Dr. Zubair Fadlullah is developing a smart home monitoring based early warning system to detect irregularity in vital signs/mental health conditions, privacy preservation of patient data.

None of this year's achievements and milestones could have taken place without our valued partners at all levels of government, and the generous donors to the Thunder Bay Regional Health Sciences Foundation.

Our Institute relies on this support and our community, and the greater science community has benefited tremendously from the ground-breaking research taking place in Thunder Bay.

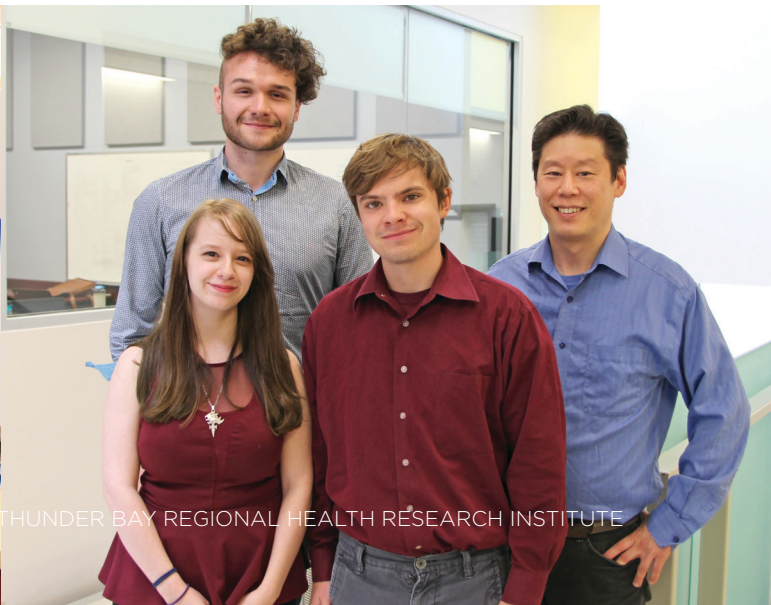
Our staff, and team of researchers have been resilient through this last year and we are proud of their hard work, determination and dedication to furthering the knowledge and ongoing discovery of medical research.

Dr. Rhonda Crocker Ellacott

President and CEO, Hospital, and CEO, Health Research Institute

Dr. Andrew Dean

Chair, Thunder Bay Regional Health Research Institute Board of Directors



THUNDER BAY REGIONAL HEALTH RESEARCH INSTITUTE

Board of Directors

Dr. Andrew Dean

(Chair of the Board) Chair of the Board Vice-President, Research & Innovation, Lakehead University

Dr. Pam Wakewich

(Vice-Chair of the Board) Vice-Chair of the Board Professor Emeritus Sociology and Women's Studies, Lakehead University Past Director, Centre for Rural & Northern Health Research

James Peotto

(Treasurer of the Board) Treasurer of the Board, Senior Accountant, Impala Canada Limited

Dr. Rhonda Crocker Ellacott

Chief Executive Officer, Thunder Bay Regional Health Research Institute and President & Chief Executive Officer, Thunder Bay Regional Health Sciences Centre

Kathleen Lynch

President, Confederation College

Dr. Sheldon Tobe

Professor in Medicine, Staff Physician, Division of Nephrology, University of Toronto; Professor and Heart and Stroke Foundation Chair, Aboriginal and Rural Health Research, Northern Ontario School of Medicine.

Andrew Ross

Manager of the Anishnaabe Bimaadiziwin Research Program, a collaboration of the Sioux Lookout Meno Ya Win Health Centre and Sioux Lookout First Nations Health Authority

John Dixon

Director of Mental Health and Addiction Services at Dilico Anishinabek Family Care

Dr. David C. Marsh

Associate Dean, Research Innovation and International Relations Professor, Clinical Sciences Northern Ontario School of Medicine

Kelly Meservia-Collins

EVP Research, Quality & Academics, Thunder Bay Regional Health Sciences Centre

Peter Bishop

Retired Judge serving communities in Northwestern Ontario and remote First Nations Communities

Dave Knutson (Observer)

Former Board Directors:

(To November 2020) **Jean Bartkowiak**

Chief Executive Officer, Thunder Bay Regional Health Research Institute President & Chief Executive Officer, Thunder Bay Regional Health Sciences Centre

Scientists

Dr. Mitchell Albert

Lakehead University/ TBRHRI Research Chair in Molecular Imaging and Advanced Diagnostics Professor of Chemistry, Lakehead University Adjunct Professor of Biology, Biotechnology, Health Sciences, and Physics, Lakehead University Adjunct Professor of Medical Sciences, Northern Ontario School of Medicine Scientist, TBRHRI

Dr. Michael Campbell

Lakehead University/ TBRHRI Research Chair in Radiochemistry for Molecular Imaging and Advanced Diagnostics Assistant Professor, Department of Chemistry, Lakehead University Scientist, TBRHRI

Dr. Alla Reznik

Canada Research Chair in Physics of Molecular Imaging Associate Professor, Department of Physics, Lakehead University Scientist, TBRHRI

Dr. Ingeborg Zehbe

Lakehead University/ TBRHRI Research Chair in Biology Associate Professor, Northern Ontario School of Medicine (West Campus) Scientist, TBRHRI

Dr. Jinqiang Hou

Lakehead University/ TBRHRI Research Chair in Radiochemistry Assistant Professor in the Department of Chemistry, Lakehead University Scientist, TBRHRI

Dr. Zubair Fadlullah

Lakehead University/ TBRHRI Research Chair in Smart Health Technology Associate Professor in Department of Computer Sciences, Lakehead University Scientist, TBRHRI

Associate Scientists:

Dr. Jane Lawrence Dewar

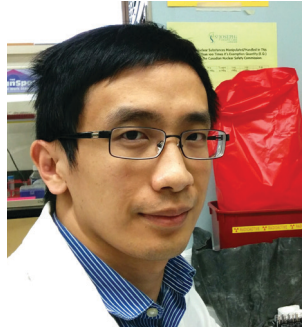
Improving the Health of People in Northwestern Ontario



Dr. Zubair Fadlullah (TBRHRI/Lakehead University) was awarded a New Frontiers in Research Grant of \$250,000 to investigate the use of drones to address the lack of reliable internet access and health care connectivity in rural areas of Northern Ontario. Dr. Fadlullah will undertake his research at a Lakehead University lab and the field work will be carried out in one of the Keewatinook Okimakanak First Nations communities. Data that could be transmitted include information regarding patients who suffer from diabetes, mental health or addictions issues.



Dr. Alla Reznik (TBRHRI/Lakehead University) was awarded \$205,000 from Natural Sciences and Engineering Research Council of Canada (NSERC) to examine a new approach to X-ray imaging over the next five years. This new method, using photoconductive material lead oxide, will improve the quality of health care through more effective and less invasive imaging connected with cardiac intervention and early breast cancer diagnosis.



Dr. Jinqiang Hou (TBRHRI/Lakehead University) received a grant from the Canada Foundation for Innovation (CFI) for \$98,655 to develop new drugs that will help prevent, diagnose and manage cancer. Dr. Hou is working with Dr. Michael Campbell and Dr. Justin Jiang exploring the development of an imaging agent that targets receptors on the surface of cells that are highly expressed in many cancers. The results of this research could potentially provide patients with more personalized care and better outcomes as well as reduce health care costs.



Dr. Walid Shahrour (Urologist, TBRHSC) specializes in reconstructive surgery and has developed a new technique to prevent urethral blockages in prostate cancer survivors. This ground-breaking surgery was developed in Thunder Bay and could be the start of a specialty program for patients across Canada. While it is a highly technical procedure, it has less chance of causing further complications outside of risks normally associated with surgery.



Dr. David Savage (Emergency Physician, TBRHSC and Assistant Professor at the Northern Ontario School of Medicine) conducts research in health human resource planning, population level pre-hospital care, emergency department operations and health care data analytics and modelling. He states that one of the greatest challenges facing the health care system is getting the right physician in the right place at the right time and with the right training. Dr. Savage is the recent recipient of a Canadian Association of Emergency Physicians Junior Investigator grant to further his research on health human resource planning.



Dr. Travis Marion (Orthopaedic Surgeon, TBRHSC) is researching the "Incidence of Acute Care Adverse Events in Hip Fracture Patients". The primary objective of this study is to determine which pre-operative comorbidities are associated with increased odds of certain adverse events in older hip fractures. Results of this research could enhance patient safety through development/refining of care pathways and the demographic data can be used to advocate for patient care.

Health Research and COVID-19

The Thunder Bay Regional Health Research Institute (TBRHRI) created a Research Arm to support the Thunder Bay Regional Health Science Centre (TBRHSC)'s COVID-19 Incident Management Team. The team:

- Gathered and reviewed literature to support evidence-based decision making and protocol development.
- Collaborated with Lakehead University to support cloth mask testing.
- Created an advisory group to select and recommend participation in appropriate clinical trials.



Making the Invisible, Visible: Ontario Researchers use new imaging technique to see COVID-19 impact on lungs

As featured on CBC news, Dr. Mitchell Albert, Lakehead University / TBRHRI Research Chair and his co-invented imaging technique, are part of an Ontario-wide research project that has received nearly \$1-million over two years to study the long-term effects of COVID-19 on people's lungs. Using this new imaging technique which involves a person breathing in a noble gas such as xenon, which dissolves into the blood, then using hyperpolarized 129Xe magnetic resonance imaging (MRI) in combination with computed tomography (CT),

will allow researchers to see what is going on in the airways. Dr. Albert's technique lights up the lungs making the invisible, visible and allows researchers to see the extent of scarring on the lungs or surrounding tissues and observe any blockages in the airway.



Bringing a COVID-19 treatment option to patients at Thunder Bay Regional Health Sciences Centre (TBRHSC)

Dr. Greg Gamble, Medical Lead for Infection Prevention and Control at TBRHSC, took the role of QI for the Clinical Trial of the Safety and Efficacy of Investigational Therapeutics for the Treatment of COVID-19 in Hospitalized Patients (CATCO).

Enhancing the Academic Environment



As Chief Scientist & Associate Vice President Research, Dr. Chris Mushquash provides research expertise and direction at TBRHRI

and TBRHSC. We congratulate Chris on the successful renewal of his Canadian Institutes of Health Research (CIHR) Tier 2 Chair in Indigenous Mental Health and Addiction.

Dr. Mushquash continues to conduct culturally-informed research and advocate for Indigenous Peoples' Health.

Positive changes to Research Ethics Board (REB) and Authorization

- With mixed emotions, we welcomed a new Chair to the

REB this year. We are grateful for, and will miss, the great leadership Shelley Tees has provided as Chair over the last several years. We are happy to welcome Dr. Bill Gregorash as the new REB Chair.

- An Indigenous community member role was created and filled this year.
- We will be going live in Fall 2021 with ROMEO software for electronic research ethics and institutional reviews.

Strategic Plan 2026

The Strategic Plan 2026 will be an inspiring and innovative roadmap to guide our Hospital together with the Health Research Institute for the next five years.

We engaged key stakeholders through:

- Interviews with staff, leaders, physicians, external partners, community members and influencers, Hospital Board members, and Research Institute Board members;
- Focus groups from Senior Leadership Council (SLC), two Boards of Directors, Regional CEOs, Staff, Volunteers, Patient Family Advisors (PFAs), general public;
- Public online survey;
- Thought Leader Series with industry leaders from around the world sharing their vision and experience about important topics such as: hospitals without walls; health system thinking; reimagining patient care after

COVID-19; and advancing health care research and innovation, and improve our staff, physician and partners’ vision of the world possible.

Through this engagement, the Strategic Planning Advisory Committee has identified key priority areas of focus for our 2026 planning for the Hospital and the Research Institute:

- 1. Patient Experience:** enhancing Patient and Family Centred Care, including seamless transitions in care, patient as partner; delivering a “hospital without walls;”
- 2. Staff Experience:** Comprehensive Health Human Resource and Human Resource strategy to include recruitment, retention, development, wellness, engagement;
- 3. Anti-racism, Diversity, Equity, Inclusion:** for all patients and staff and especially for Indigenous people and marginalized communities;

4. Research, Education, and Innovation: integrated and aligned strategy converging research, care, and education.

5. Advancing Technology: technology and infrastructure renewal, improved patient care and overall people experience;

The 2026 Strategic Plan is scheduled to be completed this summer and a formal delivery of the plan will be presented to the public early this fall.

On behalf of the Hospital and the Research Institute, we thank all of our community and partners for their ongoing commitment to the Strategic Plan 2026. Their participation will have a profound impact on health outcomes in our community and our region. We greatly appreciate the time, energy, dedication, and commitment of everyone who contributed to shaping the future of health care for patients and families in Northwestern Ontario.

To follow our progress and to learn more about the 2026 Strategic Plan simply visit www.tbrhsc.net/strategicplan2026 today.



YOUR IDEAS.

OUR PLAN.

INSPIRED CARE.

We value your input. Visit www.tbrhsc.net/strategicplan2026 to learn more and have your voice heard by completing a short survey.

STRATEGIC PLAN 2026



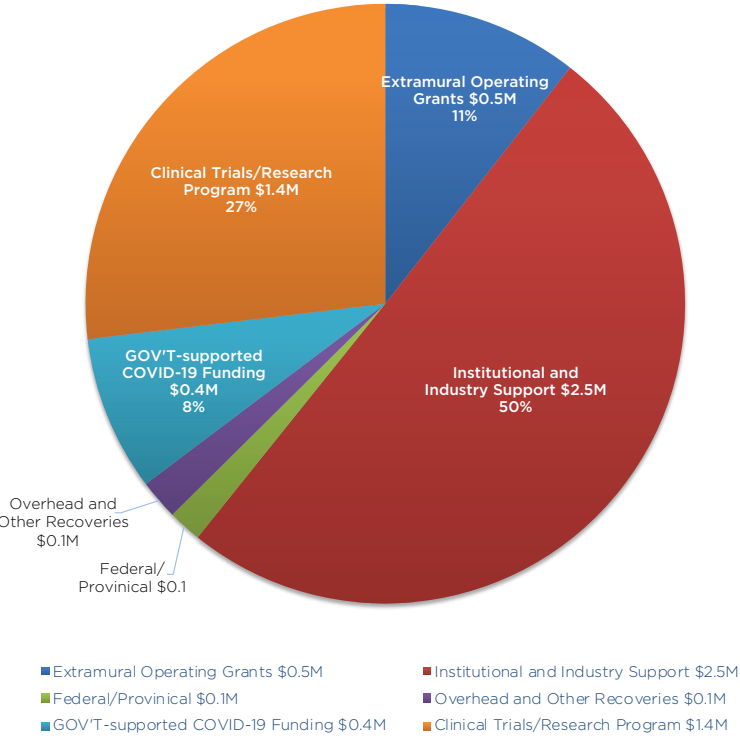
Thunder Bay Regional
Health Sciences
Centre

Thunder Bay Regional
Health Research
Institute

2020-2021 Financials

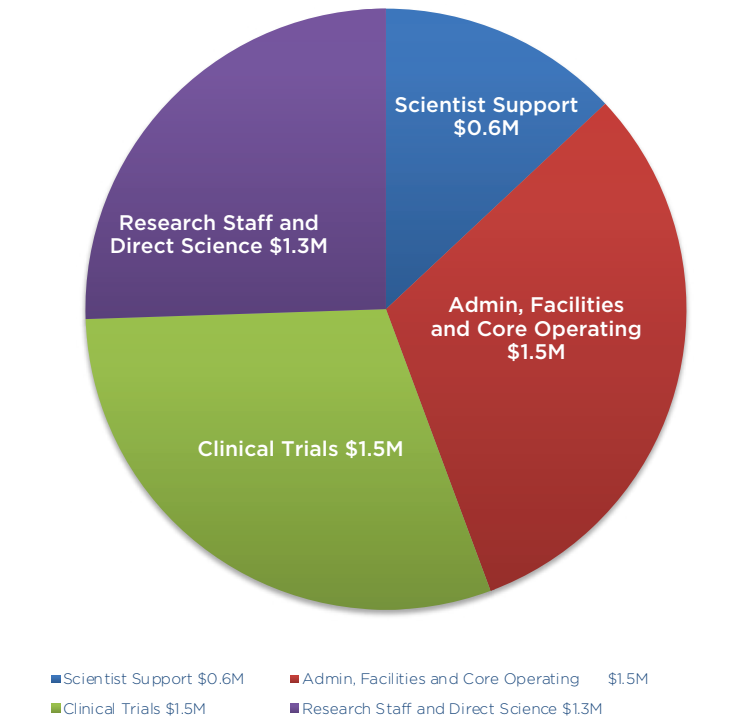
REVENUE SOURCES

Total = \$5.0M



EXPENSES

Total = \$4.9M



Funders and Partners

GOVERNMENT



ACADEMIC HEALTH SCIENCES CENTRES



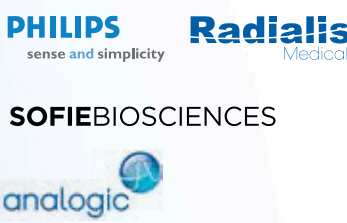
ACADEMICS



NOT FOR PROFIT



INDUSTRY





Thunder Bay Regional
Health Research
Institute

980 Oliver Road
Thunder Bay, ON P7B 6V4
Tel. 807 684 7223 | www.tbrhri.ca

Bringing
Discovery
to Life

Donner **vie à la**
découverte

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.**