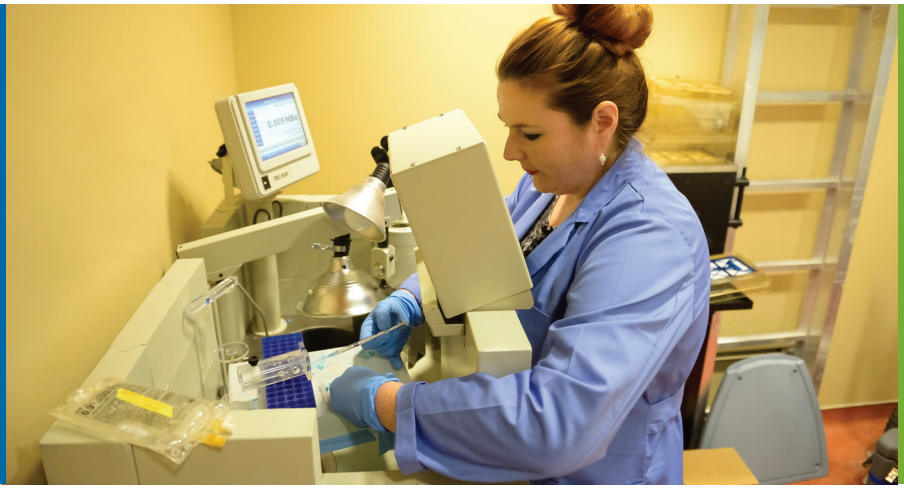
BIOTIC
Imaging for Life

YOUR PARTNERS IN DISCOVERY AND INNOVATION



Strategically located at the QEII Health Sciences Centre and IWK Health Centre in Halifax, Canada, the Biomedical Translational Imaging Centre (BIOTIC) provides single-point access to the expertise, equipment, support services, clinicians, and patient populations you need to answer your most pressing research questions. We will work with you to advance your research program and move your discoveries along the path toward real-world application and commercialization.

EXPAND YOUR RESEARCH TEAM

BIOTIC's team has expertise in fields including:

- medical physics and imaging
- cellular and molecular biology
- radiology, neurology and experimental psychology
- mechanical, electrical and computer engineering
- mathematics and computer science
- pre-clinical and clinical imaging
- project management and business development

We offer research support and expertise to help you:

- plan and conduct imaging-related research initiatives
- develop collaborations and partnerships
- access and develop experimental models
- prepare grant applications
- recruit participants
- gather and analyze data
- test and validate technologies

ACCESS ADVANCED IMAGING EQUIPMENT

BIOTIC operates a range of pre-clinical and clinical imaging equipment. Our scientists and engineers are constantly working to advance the capabilities of this equipment, to render increasingly detailed and useful information. At the same time, we help collaborators and clients gather the comprehensive data they need to examine complex scenarios from every angle.

BIOTIC's team facilitates imaging studies that will help you:

- understand healthy function and the underpinnings of disease
- shed light on disease progression and response to treatment over time
- identify and validate diagnostic and therapeutic targets
- test efficacy and side effects of treatments
- assess modes of delivery and dosing
- trace drug metabolism and disposition

CONDUCT PRE-CLINICAL RESEARCH

Pre-clinical PET/CT and SPECT—PET/CT allows for simultaneous evaluation of molecular, cellular, anatomical and metabolic information, while SPECT produces high-resolution 3-D images of radio-labelled molecules. It works with the PET/CT system to detect a wide range of biomarkers.

3T pre-clinical MRI/optional PET—The MRI renders exquisitely detailed images of soft tissues, including iron-oxide labelled cells and molecules. With the PET insert, both MRI and PET data (functional and anatomical) can be obtained rapidly and simultaneously for more comprehensive, accurate data. MRI anatomical images can also be overlaid with separate SPECT and PET images.

A fully equipped biological level 2 lab and onsite animal care facility with quarantine area provide researchers with a rare opportunity to conduct longitudinal studies in a wide range of animal models.

> **“The imaging work done by BIOTIC for our enzyme-based diagnostic for Alzheimer’s disease will go a long way toward moving our product to clinical trial.”**
>
> - Dr. Sultan Darvesh, Professor of Medicine and Medical Neuroscience, Dalhousie Medical School

EXPLORE CLINICAL IMAGING

Our clinical imaging facilities provide access to non-invasive technologies for brain and body imaging in humans. Thanks to our location in research-intensive adult and pediatric hospitals, we can connect you to the clinicians and patient populations who will enable you to explore your clinical research questions in depth.

MRI—our 3T clinical MRI scanner provides detailed anatomic, functional and spectroscopic images. It is fully outfitted for studies of the brain, heart, abdomen and pelvis.

Magnetoencephalography (MEG)—our child-friendly 306-channel whole-head MEG passively and non-invasively detects magnetic signals generated by neural activity, revealing detailed information about participants’ brain function.

Electroencephalography (EEG)—the 128-channel EEG system records the electrical activity of the brain with high spatial accuracy. Its active electrode technology reduces set-up times and maximizes participants’ comfort.

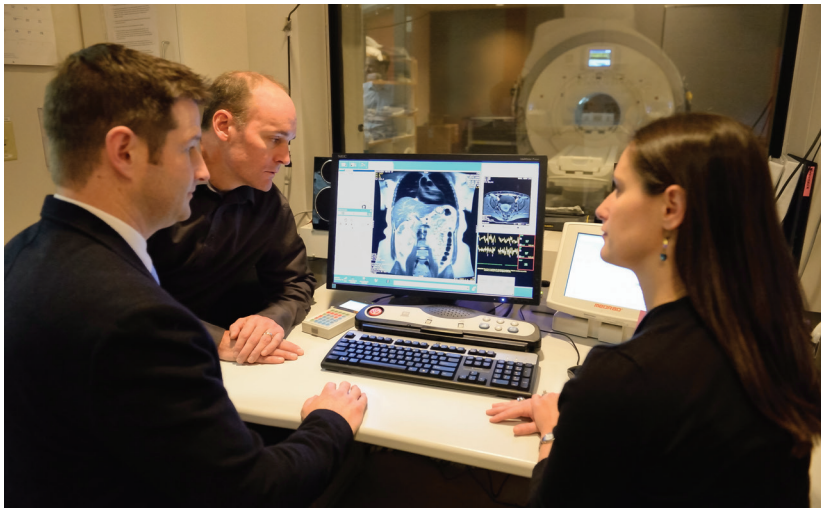
Audiometry—An audiometer complements the EEG, enabling new research directions in hearing science and device development.

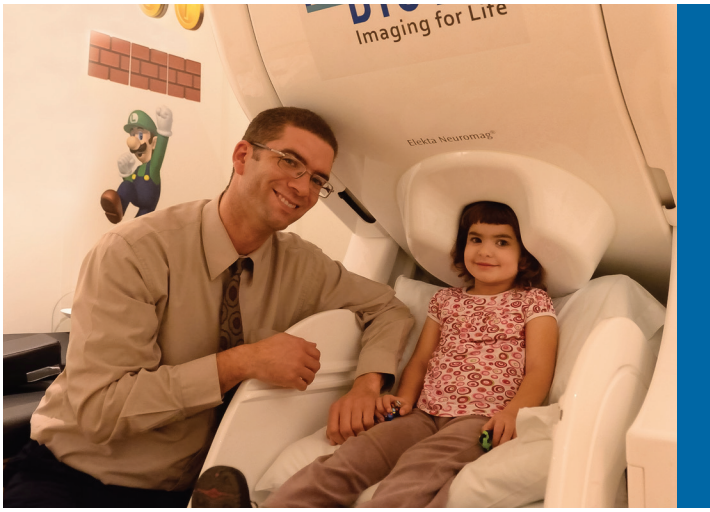
LEVERAGE OUR EXPERIENCE

We have a solid track record of productive research collaborations, with numerous high-impact publications and a growing international reputation for scientific discovery and technological innovation. We have worked with colleagues to:

- evaluate drug combinations that reduce breast cancer burden
- develop push-button technologies for assessing prostate cancer and fatty liver disease
- develop a brain-computer interface to aid recovery of motor function following stroke
- understand brain changes associated with epilepsy, Alzheimer’s disease, traumatic brain injuries and psychiatric disorders
- localize brain regions involved in speech, hearing, language learning and other key functions
- improve the accuracy of MEG and fMRI in pre-surgical brain mapping
- validate molecular targets for diagnosis and disease-modifying treatment of Alzheimer’s disease
- understand neurocognitive compensation for hearing loss and create tools for measuring changes in hearing after ear surgery

As scientists and engineers working to develop the next generation of imaging-based tools and technologies, we will help you achieve your scientific, technological and knowledge translation goals.





FOR MORE INFORMATION

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