

# Welcome to TBEP

The **Translational Biology and Engineering Program (TBEP)** is led by the University of Toronto, as a major component of the Ted Rogers Centre for Heart Research.

The Ted Rogers Centre is a collaboration between three prominent Toronto institutions, working to provide the world with new diagnoses, treatments, and tools to help people prevent, manage, and survive the devastating consequences of heart failure.

Partners in the Ted Rogers Centre for Heart Research



## 2016-17 HIGHLIGHTS



**8 Principal Investigators**



**12 Research Staff**



**66 Trainees**

14 Postdoctoral Fellows  
52 Graduate Students



**\$7 Million Total Funding**

\$1M Scholarships  
\$6M Research Funding



**41 Publications**



**3 Startup Companies**



## Research

### DISCOVERY

- Cellular and molecular mechanisms of heart failure, fibrosis, atherosclerosis, and heart valve disease
- Molecular mechanisms of microvascular function in heart failure
- Physical and molecular mechanisms of scarless tissue repair

### DIAGNOSIS

- Functional and molecular MRI for early detection of cardiac fibrosis
- Proteomic approaches to identify novel biomarkers of heart disease
- Microtissue models for cardiac disease modeling and drug development

### THERAPY

- Immunomodulatory biomaterials for cardiovascular tissue engineering and drug delivery
- Stem cell-based regeneration of heart tissue, heart valves, and blood vessels
- MRI technologies to monitor cell-based therapies



## The Facility

**TBEP** is located in the MaRS West Tower. Opened in 2016, this spectacular facility accommodates up to 130 researchers in 26,000 square feet of open concept office and wet laboratory space, with dedicated access to state-of-the-art equipment for:

- Proteomics and genomics
- Advanced in vitro and in vivo model systems
- Animal surgery and physiological monitoring
- Medical imaging and microscopy
- Biomaterials synthesis and characterization
- Microfabrication



**TBEP** is a multidisciplinary, collaborative program with the mission of understanding the complex mechanisms that underpin heart failure, and finding strategies to treat, repair, and regenerate the heart.

# Our Principal Investigators

**TBEP** unites researchers from the University of Toronto's Faculties of Engineering, Medicine, and Dentistry.



**Michelle Bendeck**  
Laboratory Medicine  
and Pathobiology



**Steffen-Sebastian Bolz**  
Physiology



**Anthony Gramolini**  
Physiology



**Scott Heximer**  
Physiology



**Hai-Ling Margaret Cheng**  
Institute of Biomaterials and  
Biomedical Engineering



**Rodrigo Fernandez-Gonzalez**  
Institute of Biomaterials and  
Biomedical Engineering



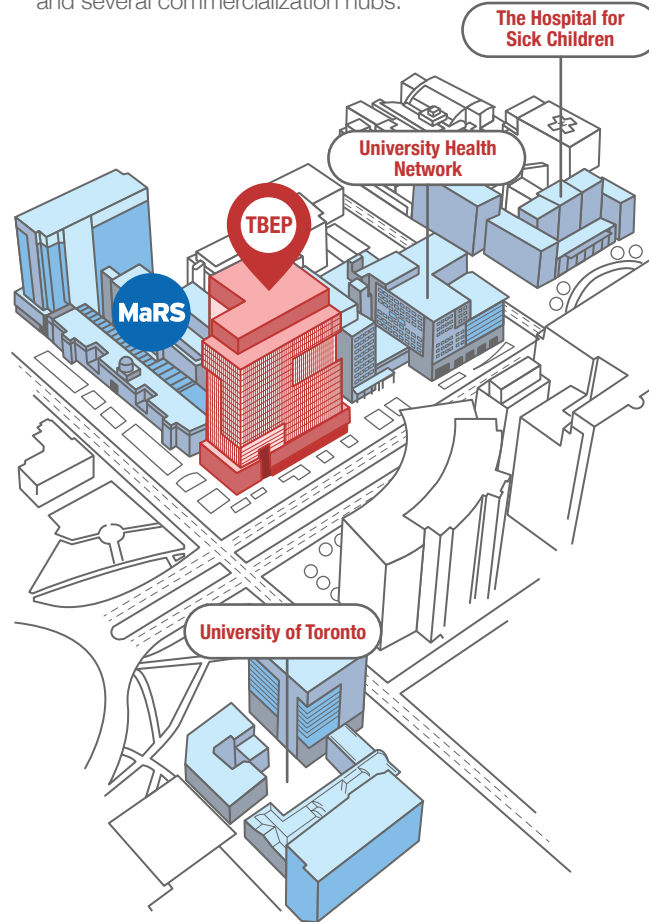
**Paul Santerre**  
Institute of Biomaterials and  
Biomedical Engineering



**Craig Simmons**  
Institute of Biomaterials and  
Biomedical Engineering

If you are interested in joining the team, please visit our website and contact the Investigator you wish to work with.

Located in the MaRS Discovery District, **TBEP** is at the nexus for cutting edge heart research and innovation. We are centrally located at the corner of College Street and University Avenue, within a five-minute walk from the University of Toronto, many hospital and academic research institutes, and several commercialization hubs.



**Visit** 661 University Ave, 14th floor, Toronto, ON  
MaRS West Tower

**General Inquiries** [admin.tbep@utoronto.ca](mailto:admin.tbep@utoronto.ca)

**Web** <http://tedrogersresearch.ca/TBEP/>

# TRANSLATIONAL BIOLOGY AND ENGINEERING PROGRAM

JOIN OUR TEAM



**THE PROMISE OF  
A HEALTHY HEART**



**TED ROGERS CENTRE  
FOR HEART RESEARCH**