

Faculty Of Health Sciences | School of Medicine



Queen's
UNIVERSITY

DEPARTMENT OF

Medicine 2019

Translational Institute of Medicine (TIME)

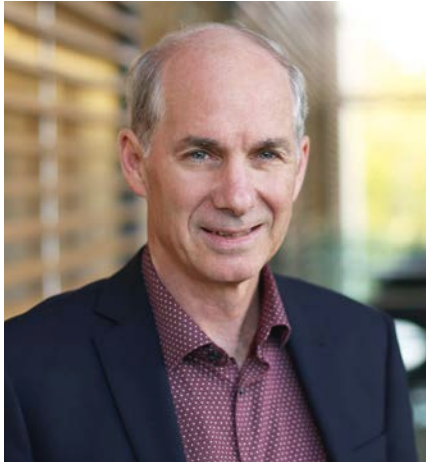


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MESSAGE FROM THE DIRECTOR



Dr. Stephen Vanner

Director — Translation Institute of Medicine - TIME

This has been an exciting first year for the Translational Institute of Medicine- TIME as a newly minted university research institute and its activities are already demonstrating its tremendous power to bring investigators and students together in a unique and highly productive research environment. The TIME network <https://uniweb.time.queensu.ca/network> is now live and provides a virtual site for over 200 researchers from multiple faculties and departments at Queen's University to connect through research themes, groups, individual profiles, and research platforms.

“This is the first tool that enables researchers to locate state-of-the-art equipment on campus and the highly qualified personnel essential to making effective use of this infrastructure”

The Translational Institute of Medicine-TIME has been fully funded by the Department of Medicine and has already invested almost 500K dollars in incubator grants designed to bring together investigators from different backgrounds to exploit the expertise and research platforms in TIME. Members from over 8 different departments are participating. TIME continues to advance its virtual network site to promote researchers and their activities, including instructions on the easy generation of the CIHR CCV, calculation of research metrics and regular showcasing of our members discoveries. TIME's unique graduate program, led by Dr. Paula James, has been extremely successful and will soon graduate its first cohort. Highlights of TIME's activities were showcased in the inaugural symposia last November to its members, our University leadership and our keynote speaker Dr. Collins (past Vice-Dean research) from McMaster University. Please find more details about these many successes in this report including key research metrics that reflect the power of TIME model.

Dr. Stephen Vanner

Director – TIME



TIME

TRANSLATIONAL INSTITUTE OF MEDICINE

INTRODUCTION

The Translational Institute of Medicine (TIME) is a new Institute at Queen’s University that captures the breadth of Translational research at Queen’s so that we can showcase our strengths both nationally and internationally. Led by Dr. Stephen Vanner (Director, TIME), the concept for TIME was first presented to the Department of Medicine (DOM) faculty members at the 2015 Fall Annual Retreat. Subsequently, it made a strategic priority by DOM membership and the DOM Executive. TIME aims to optimize the expertise and state-of-the-art research platforms (such as the Queen’s CardioPulmonary Unit (QCPU)), encourage collaborations between departments and faculties and better capitalize upon extramural funding opportunities.

RESEARCH EXCELLENCE

The primary mission of TIME is to build research excellence at Queen’s University and deliver on the promise of bench-to-bedside research. We will achieve this mandate in the following manner:

- Elevate the impact of our discoveries by rapidly translating them into novel and effective therapies to benefit the lives of diverse groups of patients.
- Improving our research productivity and competitiveness by increasing the number of high impact publications and further succeeding in obtaining Tri-council funding.
- Refining training of basic and clinical scientists with a focus on the emerging discipline of translational research.
- Ensure we prepare trainees to meet the needs of a diverse world of patients and communities.
- Attract new partners that will strengthen our research programs through collaborative expertise, sharing of novel discoveries and molecules, and enhanced support of from our research programs.
- Attract philanthropy for the ongoing support of our infrastructure and training program.

SENATE APPROVAL

In March 2019, we were officially recognized as an institute following review by the FHS Faculty Board, Queen's Senate Advisory Research Committee (SARC), the Queen's University Planning Committee (QUPC) and Queen's Senate. TIME has an established constitution that governs the way in which our institution operates and defines the leadership structure and membership.



LEADERSHIP AND ADMINISTRATIVE STRUCTURE

Three tiers of committee exist within TIME, as outlined in our constitution. Day-to-day business is conducted by a small weekly working group called the TIME team, comprised of Dr. Vanner, Dr. Hindmarch, Dr. Nihal and Brooke Ring (QCPU). The responsibility of the TIME team is to action decisions made by a monthly TIME management meeting, which also includes the Head of Medicine and Scientific Director of QCPU - Dr. Archer, the TMED Program Director - Dr. Paula James, a faculty representative - Dr. Jennifer Flemming, and an external faculty member - Dr. Mark Ormiston. Once a year, we will call an executive meeting who will advise us to ensure that we are on course to satisfy our primary mandates. The TIME team are currently working with Organizational Development from Queen's University to craft a strategic plan that will give our members a structure and mandate by which to work to meet our shared strategic priorities over the next 5-years. We will seek electronic input from our membership in the coming months before presentation to our management committee, who will request approval from the TIME Executive committee. Final feedback and completion of our strategic plan will happen at a TIME retreat, which we hope to run in Fall 2020.

BY THE NUMBERS

TIME Research Platform; TIME Network

Members across different faculties and departments at the Queen's University



13

Groups on TIME Network

241

Faculty of Health Sciences

10

Faculty of Arts & Science

Faculty of Arts & Science

Department of Biology: 1

Department of Chemistry: 4

School of Computing: 5

Faculty of Health Sciences

Department of Anesthesiology: 1

Department of Biomedical and Molecular Sciences: 68

Cancer Research Institute: 14

Department of Critical Care Medicine: 1

Department of Medicine: 136

Department of Pediatrics: 1

Department of Nursing: 1

Department of Oncology: 3

Department Pathology and Molecular Medicine: 11

Department of Public Health Sciences: 3

Department of Surgery: 2

THE TIME TEAM

Dr. Stephen Vanner

Director, TIME

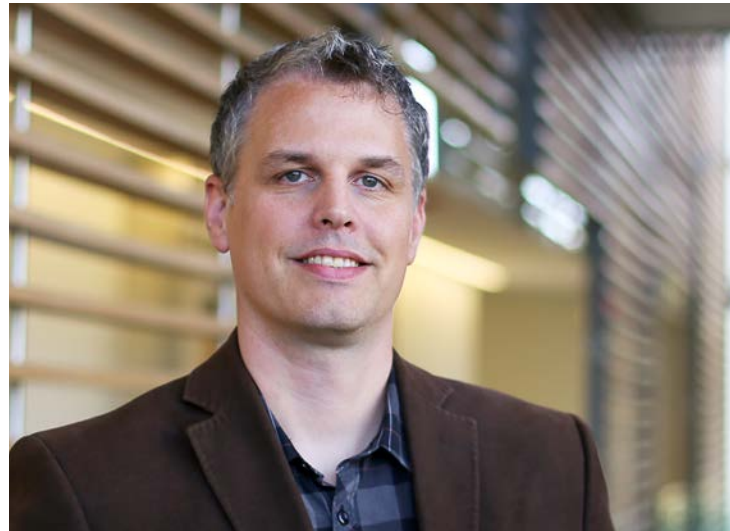
Dr. Vanner received an undergraduate degree in Life Sciences, a concurrent MD and MSc degree, and his Internal Medicine and Gastroenterology training at Queen's University. He carried out post-doctoral research training in enteric neurophysiology at the Vollum Institute in Portland, Oregon and has been an attending staff in Gastroenterology at Queen's since in 1991. His subspecialty expertise is in gastrointestinal motility disorders and his translational research program examines mechanisms underlying GI pain signaling and motility. This research program is funded by operating grants from CIHR and Crohn's Colitis Canada and he is a co-principal investigator on a CIHR SPOR. He published over 165 peer-reviewed papers (h-index=53, i10-index=122, Citations=10231). He is a fellow of the Canadian Academy of Health Sciences and the Canadian Association of Gastroenterology and currently serves as Editor-in-Chief of the journal Neurogastroenterology and Motility.



Dr. Charlie Hindmarch

Scientific Operations Director, TIME

Dr. Hindmarch is Scientific Operations Director and is currently responsible for establishing a strategic plan for the new Institute that will help drive translational research within the Department of Medicine forward with a focus on research. Dr. Hindmarch has previously been responsible for the design and implementation of the TIME Network (<https://uniweb.time.queensu.ca/>) that captures the breadth of translational research at Queen's with a focus upon the mapping of infrastructure and expertise. Dr. Hindmarch is Director of the Genomics, Transcriptomics and Molecular Medicine laboratory at the Queen's CardioPulmonary Unit (QCPU) where he is responsible for providing Next Generation Sequencing and bioinformatic strategies to the Queen's community as part of a cost recovery model. He is also Adjunct Assistant Professor in the Department of Medicine, and has published 43 peer-reviewed papers (h-index = 17, i10 = 26).



Dr. Salwa Nihal

Manager, TIME

Dr. Nihal (MD (MBBS), MPhil, MSc) is the TIME Manager who plays a vital role in managing the virtual institute with over 250 members. Her current duties include managing the department of medicine internal grant competitions, annual symposia, assistance in the development of the TIME strategic plan, organizing meetings relating to TIME governance, and operating its official website. She oversees the financial and accounting administration for TIME. Besides being a research member and an educator, Dr. Nihal is also responsible for fulfilling the Department of Medicine's research administrative duties which includes TIME and DOM Internal grant competitions.





Quentin Tsang — PhD Candidate — Transitional Medicine,
Study: Visceral Pain Signalling in Inflammatory Bowel Disease

Training & Education

SECTION II

TRANSLATIONAL MEDICINE (TMED)

The new and innovative Master of Science (MSc) and Doctor of Philosophy (PhD) in Translational Medicine are the first research-based graduate programs focused on translational medicine at both master's and doctoral levels in Canada. The programs are entirely unique by offering a curriculum interweaving graduate level research with authentic clinical experiences in a multidisciplinary environment across departments at Queen's University.

As the first of its kind, the programs link graduate level research skills with a variety of clinical experiences including patient interactions, clinical observerships and medical rounds to enhance their understanding of clinical medicine and their ability to integrate clinical and basic science research. This unique curriculum offers important foundational training for future careers in the biomedical field and provides critical skills for pursuing careers that include clinician scientists, biomedical researchers, leaders in industry and public health and/or health policy.

Both the MSc and PhD in Translational Medicine are research-based programs that require the completion of 12-credit courses, including three new mandatory core courses in translational medicine and 3 credits of elective course(s) chosen from students' area of interests, and thesis research. PhD students also have the requirement for a comprehensive exam. TMED currently has 15 MSc and 2 PhD students enrolled.

The TMED program is led by the Graduate Program Director, Dr. Paula James. She leads a team of TMED faculty which participate in Graduate Committee, course chairs, project supervisors, lecturers and clinicians who host students within their observerships.

AWARDS

We are proud to announce that several of our TMED students have secured funding from various sources as part of their training:

Ruaa Al-Qazazi – Pulmonary Heart Association Canada – Mohamed Family PH Research Scholarship
Supervisor: Dr. Stephen Archer

Devon Cole – Canada Graduate Scholarship – Master's
Supervisor: Dr. Mark Ormiston

Thalia Hua – Queen Elizabeth II Graduate Scholarship in Sciences and Technology
Supervisor: Dr. Damian Redfearn

Matthew James – Ontario Graduate Scholarship
Supervisor: Dr. Denis O'Donnell

Joe Nashed – Queen Elizabeth II Graduate Scholarship in Sciences and Technology
Supervisor: Dr. DJ Cook

Marty VandenBroek – Canadian Vascular Network Scholar Award
Supervisor: Dr. Mark Ormiston



(top, L-R) First TMED graduate cohort: George Philip, Ruaa Al-Qazazi, Devon Cole, Matthew James, Kali De Repentigny
(middle) Dr. Paula James: Program Director-Translation Medicine Graduate Program
(above) TMED Class of 2019, second cohort with faculty

TMED Graduate Program Faculty

We would like to thank all faculty members who have participated in the training of the next generation of translational scientists. The success of our highly qualified graduates is the product of the diligence and commitment of our faculty.



Paula James



Stephen Archer



Anne Ellis



Don Maurice



Mark Ormiston



Stephen Vanner



Rachel Holden



Amer Johri



Gord Boyd



Jennifer Flemming



Annette Hay



Charlie Hindmarch



Lawrence Hookey



Diane Lougheed



Denis O'Donnell



Damian Redfearn



Ramana Appireddy





Yuka Asai



Tara Baetz



Moogeh Baharnoori



DJ Cook



Genevieve Digby



Jenna Healey



David Lee



David Lillicrap



Leah Nemiroff



Jessica Noelting



Joe Pater



John Puxty



David Reed



David Taylor



Rasika Wijeratne



Program Involvement Legend

- Course Chair
- Graduate Committee Member
- Graduate Program Director

- Observerships
- Supervisor
- TMED 800 Lecturer

- TMED 801 Speaker
- TMED 802 Speaker
- TMED Research Project



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System Configuration

System Customization

Research

SECTION III



Research Funding

Knowledge Translation

The TIME Network allows faculty to view an inventory of research equipment, expertise and services relevant to the field of Translational Medicine. Since 2018, TIME has been working on this comprehensive network platform that allows individuals to create profiles that link to other faculty members with shared interests. In late 2018, we officially launched the TIME Network as a powerful tool where faculty can self-tag themselves, publications, expertise and infrastructure with descriptive terms so that networks can be formed based on shared interests.

TIME Network aims to improve our translational research network by forming new research connections (cross-pollinizing of research ideas and building competitive teams for large group grants), optimizing the sharing of expertise and research tools that are currently siloed in research groups, and reducing duplication of equipment across the faculty.

Initially, usership in the early stage of implementation exceeded our expectations; 244 faculty users have signed up for TIME UNIWeb, including all faculty in the Department of Medicine and in the Department of Biomedical and Molecular Sciences and key collaborators from other FHS and Queen's Faculties.

TIME communicates with members through our new webpage, via e-mail and through our Twitter account @QueensuTIME

13^{OVER}M

External Research funding received in the year 2019 by all TIME members in the Department of Medicine, DBMS & Pathology (It includes funding received from Government CFI, Tri-council, Clinical Trials, Associations/ Societies & Foundations)

\$287k

TIME incubator Grant Competition 2019

\$165k

Internal DOM Award Competitions

TIME Incubator Grant Competition 2019

This year TIME announced our first internal incubator grants designed to enable its members to form multidisciplinary teams that can challenge old hypotheses with new technologies and new partners. With a focus on collaboration, we hosted a ‘Scientists Speed Dating’ event that was well attended by teams of translational researchers who crossed departmental, faculty and discipline barriers to address the most pressing translational

challenges. With \$287K in funds provided by the members of the Department of Medicine (DOM), investigators from DOM assembled teams spanning 10 different departments. Ten applications went forward for external review by experts from the University of Ottawa and the University of Alberta. Based on their recommendations, the following five teams were awarded funding.



(above, L-R) Dr. Charlie Hindmarch, Dr. Patricia Lima, Dr. Gordon Boyd, Dr. David Maslove

MULTIMODAL MOLECULAR PHENOTYPING FOR SUBTYPE DISCOVERY IN SEPTIC SHOCK: Translational Extension of a Randomized Trial

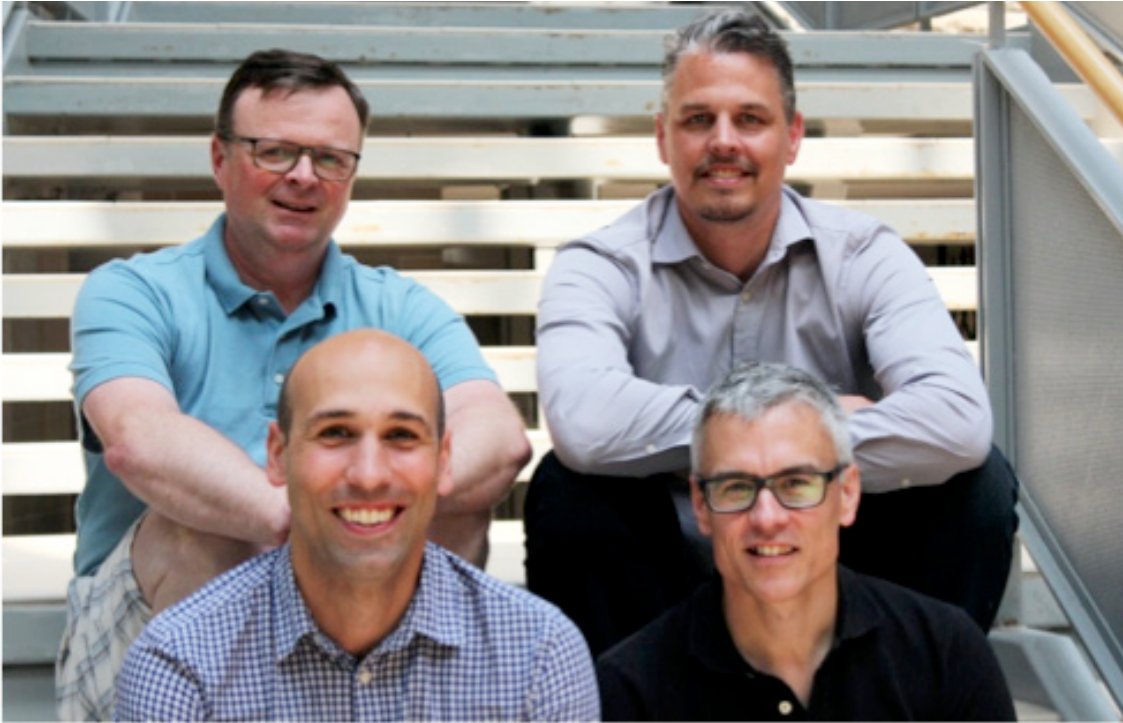
PI: Dr. David Maslove (DOM)

Co-PIs: Dr. Patricia Lima (DOM), Dr. Gordon Boyd (DOM)

Collaborator: Dr. Charlie Hindmarch (DOM)

For some people, an infection means little more than a day or two of rest, and a course of antibiotics. But in some cases, an infection can lead to life-threatening organ dysfunction, a condition known as sepsis. Sepsis is a major public health concern, as it is both common and serious. In fact, it has been estimated that 1 out of every 18 deaths in Canada involves sepsis. The care of patients with sepsis is largely supportive; despite decades of research, no specific treatments exist. One potential reason for this is that no two patients with sepsis are alike, and a treatment that might work for some may be ineffective for others.

Our research is focused on identifying individual patient traits that can be used to personalize sepsis care. This involves taking a close look at a specific type of white blood cells called neutrophils, using a state-of-the-art laboratory technique called mass cytometry. Tremendous quantities of data are generated that are then processed using machine learning algorithms to identify distinct subtypes of sepsis that might respond differently to a particular treatment. By personalizing sepsis care in this way, we aim to deliver the right treatment to the right patient at the right time. This is the promise of precision medicine, a paradigm that stands to increase the efficiency of sepsis care and save lives.



(above, L-R) Dr. Andrew Craig, Dr. Charlie Hindmarch, Dr. Mark Ormiston, Dr. David Reed

PSYCHOLOGICAL STRESS-FOOD ANTIGEN TRIGGERS IBS SYMPTOMS VIA LOSS OF ORAL TOLERANCE

PI: Dr. David Reed (DOM)

Co-PIs: Dr. Andrew Craig (DBMS, CRI)

Collaborator: Dr. Mark Ormiston (DBMS), Dr. Charlie Hindmarch (DOM)

Irritable Bowel Syndrome (IBS) is a gastrointestinal disorder characterized by abdominal pain associated with diarrhea and/or constipation. Many patients identify food as a trigger of their symptoms, yet the underlying mechanisms are unknown. In a preclinical mouse model, we have evidence that when a normally well-tolerated food is given at the same time as a psychological stressor, re-exposure to that food at a later time point causes increased pain in the gut. This increased pain appears to involve a local immune response in the gut without activating a more

generalized immune response throughout the body, as is seen in food allergy. Therefore, this project aims to determine if stress and a food trigger interact to activate a specific immune response that leads to increased pain when that food is re-introduced. We will explore this concept using state-of-the-art technology in our pre-clinical mouse model and in tissue samples from a subgroup of IBS patients. Collectively, these studies will enable us to understand the causes of IBS better and identify new therapeutic targets in food-induced symptoms in IBS patients.



(above, L-R) Dr. Mohit Kehar, , Dr. Jennifer Flemming, Dr. Prameet Sheth

CHARACTERIZING FATTY LIVER DISEASE IN ADOLESCENTS AND YOUNG ADULTS: A Prospective Feasibility Study

PI: Dr. Jennifer Flemming (DOM)

Co-PIs: Dr. Mohit Kehar (Pediatrics)

Collaborator: Prameet Sheth (DPMM)

The incidence, prevalence, and mortality from chronic liver disease (CLD) and cirrhosis are increasing in adolescents and young adults (AYAs) in North America at alarming rates. Reasons for this have not been completely determined however, it is hypothesized to be influenced by an increase in fatty liver disease in this population. Fatty liver disease is traditionally dichotomized as either alcohol or non-alcoholic fatty liver disease (NAFLD), both of which are common in AYAs. However, the degree of overlap between these two conditions in AYAs is unknown. If identified before cirrhosis develops, fatty liver disease is potentially treatable with alcohol cessation, dietary modifications, and weight loss.

Therefore, there is an urgent need to characterize and understand the natural history of fatty liver disease in AYAs. In this study, we will recruit AYAs with fatty liver disease from pediatric and adult hepatology clinics at Kingston Health Sciences Centre and use survey data to characterize exposure to alcohol and sugar-sweetened beverage consumption. We will also collect stool and saliva samples to evaluate the characteristics of the intestinal and oral microbiome, which may be associated with different stages of the disease. The overarching goal of this project is to identify, characterize and risk stratify this group to target interventions that can potentially reverse these trends for future generations.



(above, L-R) Dr. Kathrin Tyryshkin, Dr. Neil Renwick, Dr. Paula James, Robbie Kloosterman, Dr. Charlie Hindmarch

TRANSCRIPTIONAL CHARACTERIZATION OF THE HEMOSTATIC STRESS RESPONSE IN BLOOD OUTGROWTH ENDOTHELIAL CELLS FROM INDIVIDUALS WITH TYPE 1 VON WILLEBRAND DISEASE

PI: Dr. Paula James (DOM)

Co-PIs: Dr. Neil Renwick (DPMM)

Collaborator: Dr. Charlie Hindmarch (DOM), Dr. Kathrin Tyryshkin (DPMM)

Von Willebrand Disease (VWD) is the most common inherited bleeding disorder and affects 36,000 Canadians. Some affected patients experience little bleeding symptoms, while others suffer from prolonged and excessive bleeding with menstruation, dental procedures, childbirth or surgery. In the worst cases, blood transfusions or surgical procedures such as hysterectomy are required. At present, factors that lead to more severe bleeding are not entirely understood, and new knowledge in this field could help us more effectively manage patients. In this study, we will specifically test the hypothesis that Type 1 VWD patients who have

more severe bleeding, have blood coagulation systems that do not respond adequately to stress. This normal stress response provides an adaptive, evolutionary advantage as it protects against bleeding from an injury, but we believe this is disrupted in patients with VWD. We will culture cells from the blood vessels of Type 1 VWD patients and normal healthy controls to examine the differences in how these cells respond when presented with stressors. A new team of researchers has been assembled to carry out this work and the information gathered may reveal important differences that will allow for improved diagnosis and thereby, improved patient care.



(above, L-R) Dr. Charlie Hindmarch, Dr. Patricia Lima, Dr. Amer Johri, Dr. Marie-France Hetu, Orli Chapman, Julia Herr, Kathleen Harrison, Dr. Douglas Cook, Christie Boswell-Patterson

THE VANGUARD STUDY: Virtual Histology and Molecular Environment of Atherosclerotic Plaque by a Novel 3D-Guided Ultrasound Tool for Atherosclerosis Risk Detection

PI: Dr. Amer Johri (DOM)

Co-PIs: Dr. Charles Hindmarch (DOM), Dr. Douglas Cook (Surgery) and Dr. Stephen Pang (DBMS)

Collaborator: Dr. David Zelt (Surgery), Dr. Dathan Liblik (Freko Liblik Inc.), Dr. Patricia Lima (DOM)

Heart disease and stroke remain one of the most important causes of death in Canada. How can we detect heart disease and stroke earlier and more accurately to prevent the occurrence of catastrophic cardiovascular events?

We know that cardiovascular events are caused by deposits in blood vessels known as plaque. If a “vulnerable” plaque, prone to rupture, is detected in one part of the body’s blood vessel network, it may suggest that the patient as a whole is vulnerable to cardiovascular. Identifying these patients will help us treat them earlier and prevent heart attack and stroke before it occurs.

The VANGUARD Study uses ultrasound as an inexpensive, radiation-free, non-invasive, portable method ideal for imaging vulnerable plaque. Our team at the Cardiovascular Imaging Network

at Queen’s will be taking 3D ultrasound images from patients undergoing plaque removal by our Vascular Surgery department, and analyzing this diseased tissue using advanced, cutting-edge molecular techniques at the Queen’s Cardiopulmonary Unit. We will be able to match the pattern of tissue seen on ultrasound with dangerous or disease-causing cells that suggest risk of cardiovascular events. Our automated ultrasound technology, IntelliPlaque, creates a “texture map” of the components of the plaque. We envision applying this to all patients at risk of cardiovascular disease.

The VANGUARDians are a team of physicians, scientists, engineers, and students from several fields, working together to find solutions; supported by a grant from the Translational Institute of Medicine (TIME) program and CINQ (CINQLab.com, twitter @amerjohri).

DOM Research Awards

In addition to the TIME Incubator grants, the Department of Medicine held its annual grant competitions for DOM Research Award and John Alexander Stewart (JAS) Fellowship to support research opportunities within the Department. A total of \$124,646 was awarded across the three categories for the 2019 competition.

RECIPIENTS OF THE DOM RESEARCH AWARDS 2019

Category: CIHR Pillars



Dr. Garima Shukla

Project title: Effects of recreational cannabis use on sleep, mood and behavior among persons with epilepsy – a cross-sectional study



Dr. Wael Abuzeid

Project title: Echocardiographic and Hemodynamic Determinants of Morbidity and Mortality in Patients Referred for Percutaneous or Surgical Mitral Valve Repair



Dr. Gordon Boyd

Project title: Is poor cerebral perfusion associated with delirium in critically ill patients? A prospective multicenter observational study

Category: Clinical Innovation



Ramana Appireddy

Project title: Patient experience and healthcare costs with home virtual visit, a multiple methods study



Dr. Genevieve Digby

Project title: Improving Timelines of Diagnosis and Access to Specialty Care for Patients with Lung Cancer in the South East Region



Dr. Sean Bennet

The John Alexander Fellowship Award

Dr. Bennet (supervised by Dr. David Reed) joined the Gastrointestinal Diseases Research Unit (GIDRU) lab as a Postdoctoral fellow in 2018 and won a JAS award for his project titled “Nociceptive signalling via an interaction of diet and gut flora”. Over 70% of patients with irritable bowel syndrome (IBS) report that meals trigger their symptoms such as abdominal pain. Bacterial and metabolic profiles are also linked to diet. While mechanistic knowledge behind symptom triggers is lacking, this study focuses on elucidating the relationship between diet, gut bacteria and metabolites with the aim to identify new therapeutic strategies and biomarkers in IBS.

SEAMO Innovation Fund Show Case 2019

In the year 2018-2019, SEAMO Innovation Fund awards were received by the following 4 DOM members. These 4 unique projects aim to transform healthcare delivery in Ontario in several domains.

It provides short-term seed funding to support innovative projects and enable academic physicians to develop programs sufficiently to qualify for additional support and to evaluate novel strategies to transform health care delivery in Ontario



Dr. Lawrence Hookey

“Is Needle Knife Fistulotomy an Effective First Step Strategy for All ERCs?”



Dr. Amer Johri

“Canada’s First Centre of Excellence for the Cardiovascular Screening and Care of the Athlete Program”



Dr. Alberto Neder

“Improving Neuromuscular Fatigue with Supplemental Oxygen to Enhance Exercise Tolerance in Pulmonary Fibrosis: A Randomized, Placebo-Controlled Trial”



Dr. David Reed

“Metabolomics: Moving Beyond Symptoms to Phenotype Irritable Bowel Syndrome.”

Tri-Council Research Grants

During the 2019 academic year, TIME members were awarded a number of external grants. We especially want to congratulate CIHR and NSERC funding successes from the following PI's and their teams:



Dr. Gordon Boyd

Dr. Gordon Boyd, Division of Neurology, Queen's Department of Medicine, received funding for his CONFOCAL-2 program of research in the CIHR project grant competition. The CONFOCAL-2 study is an international multicentre prospective observational study designed to assess the relationship between cerebral oxygenation, delirium, and long-term cognitive impairment in critically ill patients. It is currently running at 4 sites in Ontario, and this grant will allow the expansion to 10 sites across Canada and the US.



Dr. Alan Lomax

Dr. Alan Lomax, Division of Gastroenterology, Queen's Department of Medicine, received CIHR funding for his project Modulation of pain in Irritable Bowel Disease (IBD), by microbial proteases. This proposal takes a different approach to the study of how to treat pain in IBD by examining whether the microbes reside in the gut modulate pain. His research will investigate what changes in the microbiota of IBD patients leads to worsening pain and lay the groundwork for a novel microbial therapy that is more effective and safer than existing opioid pain medications.



Dr. John S Allingham

Dr. John S Allingham, Department of Biomedical and Molecular Sciences, received funding for his study: Molecular mechanisms of kinesins that control microtubule and actin polymerization dynamics, by the **Natural Sciences And Engineering Research Council Of Canada (NSERC)** in the discovery grant competition.



Dr. Shetuan Zhang

Dr. Shetuan Zhang, Department of Biomedical and Molecular Sciences, received funding from **Natural Sciences And Engineering Research Council Of Canada (NSERC)** for his project: Identification of the S1-S2 linker as a novel mechanosensor for Kv1.5 regulation.



Dr. Bruce W Banfield

Dr. Bruce W Banfield, Department of Biomedical and Molecular Sciences, received funding from the Canadian Institutes of Health Research (CIHR) for his study: Early Stages in the Morphogenesis of Herpes Simplex Virus.



Dr. Frederick W K Kan

Dr. Frederick W K Kan, Department of Biomedical and Molecular Sciences, received funding for his research study: Role of Human Oviduct in Enhancement of Sperm Fertilizing Competence, from the Canadian Institutes of Health Research (CIHR).

SEAMO Endowed Education and Scholarship Fund 2019

Four of our faculty members received the 2019 SEAMO Endowed Education and Scholarship Fund award in May 2019 which supports projects intended to add value to the continuum of medical education offered through Queen's School of Medicine e.g. undergraduate medical education, postgraduate training programs or continuing professional development.



Dr. Paula James

Department of Medicine

Learning in Translational Medicine Graduate Program: A Developmental Evaluation Approach



Dr. Stephen Gauthier

Department of Medicine

Investigating the Factors that Impact the Quantity of Workplace-based Assessments and Performance in Residency Training



Dr. Genevieve Digby

Department of Medicine

Evaluation of a Formal Patient Safety Curriculum and Informal Experiential Learning on Internal Medicine Residents' Knowledge, Skills and Attitudes Related to Quality Improvement and Patient Safety: Informing a Curriculum and Competency-based Assessment



Dr. Amer Johri

Department of Medicine

Integrating Cardiac and Lung POCUS into the Medical School Curriculum: Didactic Methods compared to E-Learning

BY THE NUMBERS

**Journal articles published by all TIME members and
associate TIME members in the year 2019**

*Disclaimer: Information is based only on
the numbers from the updated profiles on
the TIME Network*

OVER 328

Over 328 publications in the year 2019 by
all TIME members





TIME

TRANSLATIONAL INSTITUTE OF MEDICINE

Translational Institute of Medicine - TIME

Symposium 2019

2019 | *New Medical Building | 115 Arch Street*

Description

Location

Dr. Stephen Vanner

Speaker

Collins

*Institute McMaster University
and rewards of translational medicine*

Student Presentations

Microphages and NLRP3 in

Aggression in Mice

Experimental

Events

SECTION IV

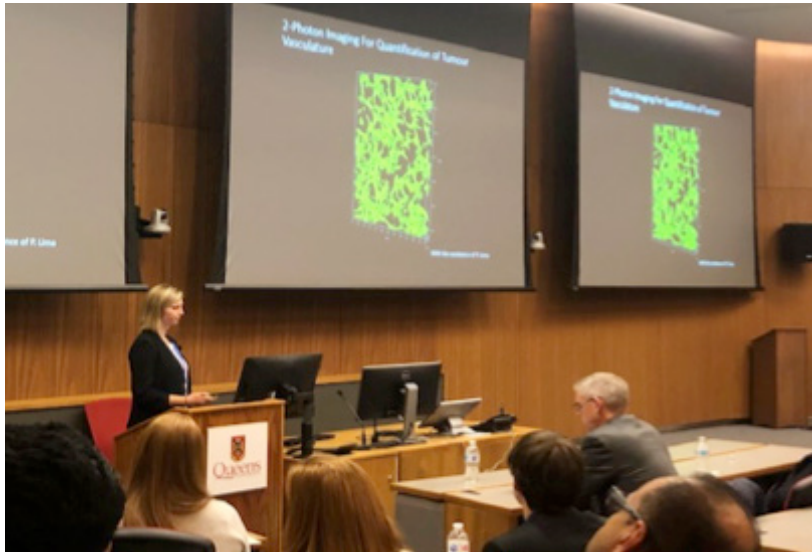


McM
UNIVERSITY

TIME Inaugural Symposia 2019

In November 2019, we held our first, annual TIME Symposium. The event was a great success with over 100 faculty, staff and students from the Faculty of Health Sciences. A highlight of the event was the presentation by Dr. Collins on the 'Challenges and Rewards of Translational Medicine', where he laid out a roadmap for success that placed collaboration between basic scientists and clinicians at the heart of translational research. We also enjoyed talks from the five faculty members who were successful

TIME Incubator grant awardees, and who introduced their teams, big ideas, and preliminary data. Lastly, we were particularly proud of the TMED students who were invited to present their research. The students demonstrated both the calibre and diversity of the TMED program, each giving outstanding presentations of their work. Much of the feedback we received from the event focused on the quality of the TMED talks and the research being performed by them.



*(left) TMED student Devon Cole presenting her study in the Inaugural TIME Symposium
(bottom left) Dr. Kim Woodhouse (VP Research, Queen's University) providing opening remarks.
(bottom right) Director of TIME Dr. Stephen Vanner giving the overview of the symposium.*





(above) Guest speaker: Dr. Stephen Collins
(Director, Farncombe Institute McMaster University)



(above) TIME Symposium

- **Ruaa Al-Qazazi Study title:** "Increased right ventricular macrophages and NLRP3 in Monocrotaline Pulmonary Hypertension" (supervisor – Dr. Stephen Archer)
- **Devon Cole Study title:** "Examining the Effects of BMP9 on Angiogenesis in Murine Metastatic Lung Tumors" (supervisor – Dr. Mark Ormiston)
- **Kalandra DeRepentigny Study title:** "Evaluating the Cause of Abnormal Bleeding Experienced by Hemophilia Carriers" (supervisor – Dr. Paula James)
- **Matthew James Study title:** "Differential Mechanisms of Exertional Dyspnea Relief in Chronic Obstructive Pulmonary Disease: Fentanyl + O2 vs. Bronchodilators" (supervisor – Dr. Denis O'Donnell)
- **George Philip Study title:** "Liver transplant waitlist trends among young American adults" (supervisor – Dr. Jennifer Flemming).



(above) Dr. David Reed



(above) Dr. Stephen Collins, Dr. Stephen Vanner,
Dr. Salwa Nihal, Dr. Charlie Hindmarch

Research 'Speed Dating' Session for Scientists

The first TIME Speed Dating event for the TIME members was held in February, 2019. This popular event gives translational researchers the opportunity to deliver their 'elevator pitch idea' to scientists who are experts in state-of-the-art technology available at Queen's. The outcome of each 'date' integrated new tools each research proposal and added value to the team. Our speed dating sessions are integrative, transformative and collaborative.

*(right, L-R) Dr. David Maslove, Dr. Charlie Hindmarch & Dr. Patricia Lima
(below, L-R) Dr. Diane Loughheed, Lisa McAvoy
(below-right, L-R) Dr. Anne K Ellis, participant, & Dr. Stephen Vanner*



Statement of Equity, Diversity and Inclusion

At the Translational Institute of Medicine (TIME), we commit to providing a welcoming and accommodating environment. We recognize that equity and diversity are sources of strength that promote a culture of excellence, innovation and inclusion that thrive on the contributions of all our members. We work in the context of a university fully committed to the principles and programs for equity and diversity. The core of our mandate is to continuously educate and improve the environment through mutual respect and understanding in all programs, while focusing on research and patient care.

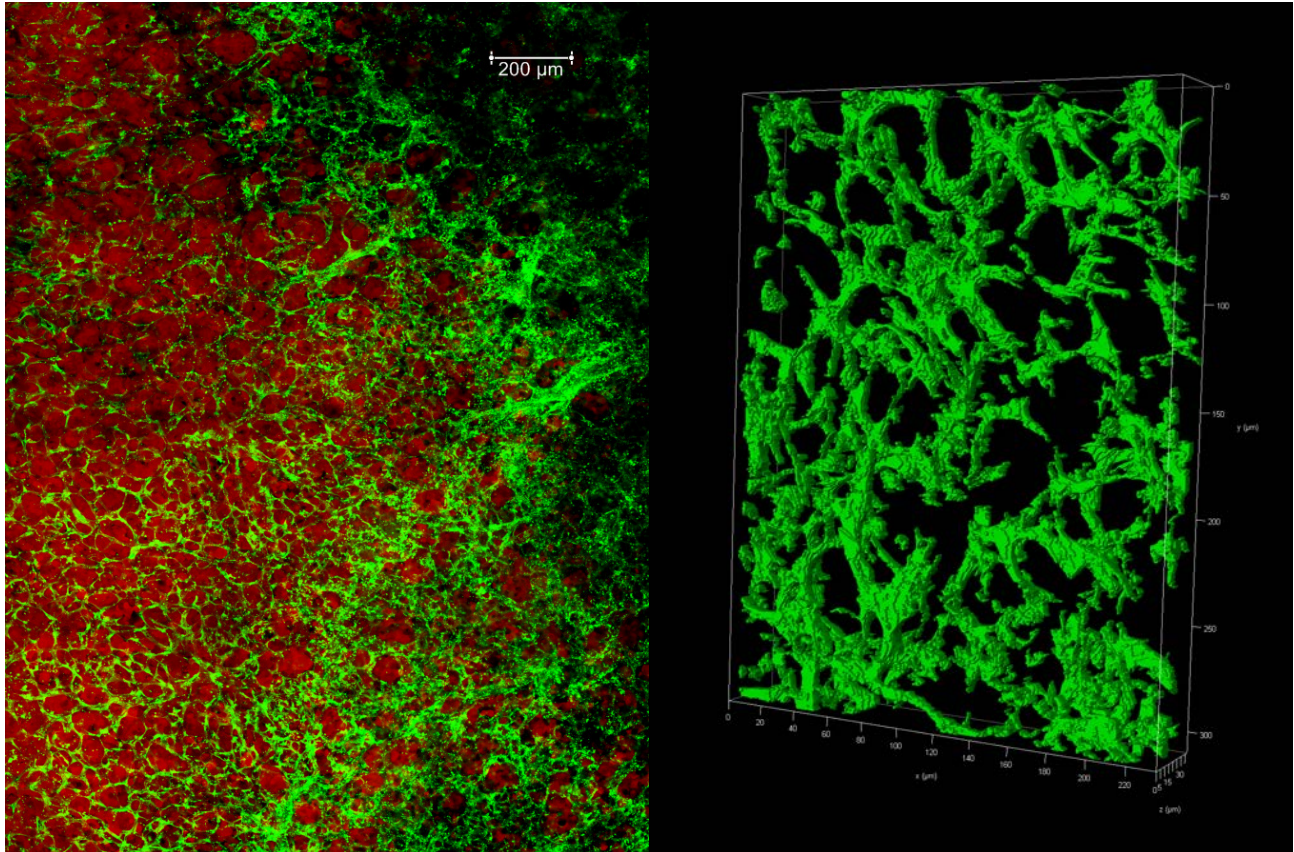
In alignment with Queen's University we strive to:

- Maintain an environment of fairness, mutual respect and inclusiveness where all may work, learn and share their perspectives free of discrimination
- Recruit and retain learners, faculty and staff who reflect the diversity of Canadian communities
- Ensure our programs prepare our trainees to meet the needs of, improve the lives of a diverse group of patients

Future of TIME

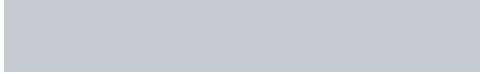
TIME will devote the coming year to building our strategic plan, designed to meet our mandate of bringing researchers together from across the Faculty and University. In parallel we will continue our exciting initiatives. We have already completed our second “Speed Dating” session for TIME teams and completed

our second TIME incubator grant competition. We look forward to sharing their successes and our strategic plans to further the opportunities for the existing 250+ and new TIME members across the University.



*Photo credits: Patricia Lima, sample from Devon Cole.
Green fluorescent lung endothelial cells vascularizing a mouse breast cancer metastasis that has been engineered to express a red fluorescent protein.*





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