

IBBME Core and Cross-appointed Faculty in the Engineering in a Clinical Setting Theme

1. Amon, Cristina*
2. Andrysek, Jan*
3. Benhabib, Beno*
4. Biddiss, Elaine*
5. Black, Sandra*²
6. Borschel, Gregory
7. Brock, Kristy*²
8. Cafazzo, Joe*
9. Caldarone, Christopher
10. Chau, Tom*¹
11. Cheung, Angela
12. Coates, Allan*
13. Drake, James
14. Easty, Tony*²
15. Eizenman, Moshe
16. Fernie, Geoff*
17. Goldenberg, Andrew
18. Grantcharov, Teodor*
19. Gross, Allan
20. Hynynen, Kullervo¹
21. Jaffray, David
22. Johnston, Wayne²
23. Keshavjee, Shaf²
24. Lapinsky, Stephen
25. Mandelis, Andreas¹
26. Mihailidis, Alex*²
27. Milgram, Paul
28. Popovic, Milos*²
29. Pritzker, Ken
30. Schweizer, Tom*
31. Shojania, Kaveh¹
32. Steele, Catriona*
33. Steinman, David
34. Strauss, Bradley*
35. Trbovich, Patricia*
36. Weersink, Robert*
37. Wright, Graham*²
38. Yee, Albert

*currently supervising clinical engineering graduate students

¹Canada Research Chair

²Named Research Chair

Profiles of selected faculty in the Engineering in a Clinical Setting Theme of IBBME

Full Professors

Name	Cristina Amon
Graduate Training	26 PhD, 25 Masters
Career Research Funding	\$55.5 million
Journal Articles	94
Academic Rank	Dean, Faculty of Applied Science and Engineering
Graduate Appointments	IBBME, MIE, SGS
Research Chairs	National Council of Deans of Engineering and Applied Science (NCDEAS) of Canada, Research Committee Chair
Areas of Research	Fluid Dynamics & Heat Transfer, Nano-scale Thermal Transport, Heat and Mass Transfer Enhancement, Phase Change Heat Transfer, Concurrent Thermal Design, High-Performance Electronics Cooling Technologies, Transport in Methanol Fuel Cells and SOFCs, Hemodynamics and Mass Transport in Biological Systems, Aortic Aneurysms and Intravenous Blood Oxygenators
Selected Awards	Engineers Canada Award for the Support of Women in the Engineering Profession, 2010; Most Important Hispanic in Technology Award, 2010; ASME Heat Transfer Memorial Award, 2009; Canadian Academy of Engineering, Fellow, 2009; Massey College, University of Toronto, Senior Fellow, 2009; Women Engineer Inaugural Award, ASME Electronics and Photonics Packaging Division, 2008; Named One of America's Most Important Hispanics in Technology and Business, Hispanic Engineer and Information Technology Magazine, 2005, 2006.

Name	Allan Coates
Graduate Training	3 PhD, 3 Masters
Career Research Funding	\$3.7 million
Journal Articles	148
Academic Rank	Professor
Graduate Appointments	IBBME, Physiology
Research Chairs	
Areas of Research	adapting new technologies in the aerosol field to patient care; nebulizer systems for the treatment of cystic fibrosis (CF); role of exercise and exercise testing in cystic fibrosis; lung gene delivery systems
Selected Awards	Medical Research Council of Canada – Fellowship, Kinsmen Mary Ivany Memorial Canadian Cystic Fibrosis Foundation Scholarship, Senior Research Scientist Award- The Montreal Children's Hospital Research Institute

Name	Milos Popovic
Graduate Training	30 +
Career Research Funding	
Journal Articles	64
Academic Rank	Professor
Graduate Appointments	IBBME, MIE, ECE, GDRS
Research Chairs	Toronto Rehab Chair in Spinal Cord Injury Research
Areas of Research	Neuroprostheses for grasping, standing, walking and sitting; modeling of locomotion, standing, grasping, and reaching functions
Selected Awards	Engineering Medal for Research and Development, Ontario Society of Professional Engineers and Professional Engineers of Ontario; Technology Transfer Award

Name	James Drake
Graduate Training	
Career Research Funding	\$1.2 million
Journal Articles	201
Academic Rank	Professor
Graduate Appointments	IBBME, IMS
Research Chairs	
Areas of Research	Neuroendoscopy; Complex Shunt Problems; Computer Assisted Surgery
Selected Awards	"Doctor of the Year", Annual Herbie Fund Mistletoe Ball, CNS American Syringomyelia Alliance Project Fellowship Award, Donald D. Matson Award

Name	David Steinman
Graduate Training	7 Masters, 6 PhD
Career Research Funding	\$3.5 million
Journal Articles	71
Academic Rank	Professor
Graduate Appointments	MIE, IBBME
Research Chairs	
Areas of Research	The overarching theme of my research is the integration of medical imaging and computational modeling to elucidate the role of hemodynamic forces in the development, diagnosis and treatment of cardiovascular diseases. This program can be broken down along two complementary lines of research. The first, image-based modeling, exploits medical imaging data to construct patient-specific computational fluid dynamics (CFD) models. The second, virtual imaging, uses computational models to simulate the impact of complex anatomy, flow and motion on medical images.
Selected Awards	Career Investigator Award – Heart and Stroke Foundation, Premier’s Research Excellence Award

Name	Kenneth Pritzker
Graduate Training	12 Masters, 3 PhD
Career Research Funding	\$7.4 million
Journal Articles	229
Academic Rank	Professor
Graduate Appointments	Lab Medicine & Pathobiology, SGS, Surgery, Clinical Biochemistry, IBBME
Research Chairs	
Areas of Research	Biom mineralization: Normal and Pathological; Pathogenesis of Degenerative Joint Diseases; Pathogenesis of Crystal Deposits in Tissues; Connective Tissues as Biomaterials; Novel Biomaterials; Biomedical Applications of Fullerenes; Connective Tissue Neoplasia
Selected Awards	

Name	Paul Milgram
Graduate Training	27 Masters, 16 PhD,
Career Research Funding	\$2.6 million
Journal Articles	21
Academic Rank	Professor
Graduate Appointments	MIE, IBBME
Research Chairs	
Areas of Research	Human factors applications in medicine, mixed reality (MR) displays, human-machine interfaces for remote control, Visualizations of 3D data, manipulation of 3D data, Human factors applications in air traffic control, models of visual attention
Selected Awards	

Name	Kullervo Hynynen
Graduate Training	33 Masters, 32 PhD
Career Research Funding	NA
Journal Articles	260
Academic Rank	Professor
Graduate Appointments	Medical Biophysics, IBBME
Research Chairs	Canada Research Chair in Imaging Systems and Image-Guided Therapy (Tier 1)
Areas of Research	
Selected Awards	Fellow of the Acoustical Society of America, Robinson Award Lecture, North American Hyperthermia Society

Name	Andreas Mandelis
Graduate Training	21 Masters, 16 PhD
Career Research Funding	\$8.1 million
Journal Articles	284
Academic Rank	Professor
Graduate Appointments	MIE, ECE, IBBME
Research Chairs	Canada Research Chair (Tier I) in Diffusion-Wave Sciences and Technologies
Areas of Research	Fundamental physical processes as they impact instrumentation science and signal generation in the fields of thermophysics, non-radiative and radiative phenomena in electronic, optical and biomedical materials, thermal-wave and diffusion-wave phenomena in electronic and photonic media. More recent interests include building the foundations of biothermophotonic and bioacoustophotonic transport phenomena in hard (dental) and soft tissues.
Selected Awards	010 Killam Research Fellowship, 2009 Canadian Association of Physicists (CAP) Medal for Outstanding Achievement in Industrial and Applied Physics, Senior Prize of the International Photoacoustic and Photothermal Association.

Name	Graham Wright
Graduate Training	13 PhD, 5 Masters
Career Research Funding	\$69.5 million
Journal Articles	91
Academic Rank	Professor
Graduate Appointments	IBBME, Medical Biophysics
Research Chairs	Canada Research Chair (Tier 1) in Imaging for Cardiovascular Therapeutics
Areas of Research	Cardiovascular imaging, with an emphasis on Magnetic Resonance Imaging (MRI)
Selected Awards	Cum Laude Award, Research Trainee Prize, 89th Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA), Lauterbur Award, Walter Berdon Award for Basic Science Paper in Pediatric Radiology, Premier's Research Excellence Award

Name	Beno Benhabib
Graduate Training	21 PhD, 66 Masters
Career Research Funding	\$4 million
Journal Articles	113
Academic Rank	Professor
Graduate Appointments	MIE, ECE, IBBME
Research Chairs	
Areas of Research	Autonomous Robotic Systems
Selected Awards	

Name	Sandra Black
Graduate Training	15 PhD, 6 Masters
Career Research Funding	\$30.6 million
Journal Articles	276
Academic Rank	Professor
Graduate Appointments	Medicine, GDRS, IMS
Research Chairs	Brill Chair in Neurology
Areas of Research	neurological degeneration and regenerative processes at the integrative level; cognitive sequelae of stroke and stroke recovery; differential diagnosis and monitoring of dementia utilizing concurrent clinical, neuropsychological and neuroimaging measures
Selected Awards	University of Toronto Department of Medicine Mentorship Award, SRI Merit Pool Award, Deborah Ivy Christiani Brill Chair in Neurology, The Acenberg Award

Name	Geoff Fernie
Graduate Training	11 PhD, 19 Masters
Career Research Funding	\$55.65 million
Journal Articles	86
Academic Rank	Professor
Graduate Appointments	IBBME, MIE, SGS, OSOT, GDRS, IMS, Physical Therapy
Research Chairs	
Areas of Research	Development of Technology to Assist Older People; People with Disabilities to live independently at home and reduce the burden of care on formal and informal caregivers; Accessible environments; Hand Hygiene
Selected Awards	Inducted into the Terry Fox Hall of Fame, MEDEC Annual Award for Medical Achievement, Dr Jonas Salk Award, inducted as a fellow to the Canadian Academy of Health Sciences

Name	Allan Gross
Graduate Training	1 PhD
Career Research Funding	Not Indicated
Journal Articles	186
Academic Rank	Professor
Graduate Appointments	Surgery
Research Chairs	
Areas of Research	rthopaedic surgeon specializing in lower extremity reconstruction, with a particular interest in revision arthroplasty of the hip and knee.
Selected Awards	The Genzyme International Cartilage Repair Society (ICRS) Cartilage Research Life Time Award, Order of Ontario, The Canadian Orthopaedic Association President's Award for Excellence in Recognition of Outstanding Contributions to Orthopaedic Surgery

Name	David Jaffray
Graduate Training	10 Masters, 10 PhD
Career Research Funding	\$137 million
Journal Articles	169
Academic Rank	Professor
Graduate Appointments	IBBME, Medical Biophysics, Radiation Oncology
Research Chairs	
Areas of Research	Contribution to our understanding of the physics factors limiting the performance of megavoltage radiography systems; The development of portal imaging systems for use in radiation therapy; The development of kilovoltage cone-beam CT for image guided RT
Selected Awards	Innovation Award 2007, Inventor of the Year Award-University Health Network, Canada's Top 40 Under 40 Award

Name	Wayne Johnston
Graduate Training	24 Masters, 7 PhD
Career Research Funding	\$2.6 million
Journal Articles	318
Academic Rank	Full Professor
Graduate Appointments	IBBME, Surgery, IMS, SGS
Research Chairs	R. Fraser Elliott Chair in Vascular Surgery
Areas of Research	Abdominal aortic aneurysm repair. Hemodynamics and Doppler ultrasound research
Selected Awards	

Associate Professors

Name	Kristy Brock
Graduate Training	2 PhD, 3 Masters
Career Research Funding	\$1.8 million
Journal Articles	53
Academic Rank	Associate Professor
Graduate Appointments	Radiation Oncology, Medical Biophysics, MedSci, IBBME
Research Chairs	Cancer Care Ontario Research Chair
Areas of Research	Radiation Therapy, Image Guidance, Image Analysis, Biomechanical Models, Deformable Registration
Selected Awards	Radiation Physics Research Productivity Award; Research Leadership Award; Outstanding Research Potential; Most Influential Research Publication; Accuray Award

Name	Christopher Caldarone
Graduate Training	
Career Research Funding	\$3 million
Journal Articles	89
Academic Rank	Associate Professor
Graduate Appointments	Surgery, IBBME
Research Chairs	
Areas of Research	Apoptosis-related mitochondrial dysfunction after neonatal cardiac surgery; Remote ischemic preconditioning;
Selected Awards	

Name	Tom Chau
Graduate Training	14 PhD, 34 Masters
Career Research Funding	\$6.5 million
Journal Articles	93
Academic Rank	Associate Professor
Graduate Appointments	IBBME, GDRS, MIE, Nursing
Research Chairs	
Areas of Research	pediatric rehabilitation engineering; physiological access technologies including near-infrared spectroscopy, infrared thermography, mechanomyography and transcranial Doppler ultrasound
Selected Awards	Globe & Mail's 25 Transformation Canadians, Da Vinci Award (National MS Society, US), Top 40 Under 40, Maclean's Magazine 2006 Honour Roll, Perkin's Prize, Forchheimer Prize, Engineering Medal (PEO).

Name	Angela Cheung
Graduate Training	11 Masters, 4 PhD
Career Research Funding	\$4.4 million
Journal Articles	104
Academic Rank	Associate Professor
Graduate Appointments	IMS, IBBME, Medicine, HPME, DLSPH
Research Chairs	
Areas of Research	Postmenopausal Health (Osteoporosis, Cardiovascular Health, & Prevention of Cancers); Clinical and Functional Outcomes, Quality of Life, and Health Services Research; Innovations in Diagnostic Tests on Bone; Cost-effectiveness Analyses, Medical Decision Making, and Health Policy Issues related to Women's Health
Selected Awards	Canadian Who's Who, Who's Who of Canadian Women, Canadian Institutes of Health Research/OWHC Senior Investigator Award, Archie Sopman Diabetes Research and Education Award

Name	Tony Easty
Graduate Training	1 PhD, 12 Masters
Career Research Funding	\$5.7 million
Journal Articles	25
Academic Rank	Associate Professor
Graduate Appointments	IBBME, ECE
Research Chairs	Baxter Chair in Health Technology
Areas of Research	Human factors engineering, safety in healthcare, safe medication delivery, workflow practices in healthcare, medical device design and development
Selected Awards	ExCEL Award for Excellence in Clinical Engineering Leadership, Outstanding Young Canadian Biomedical Engineer

Name	Moshe Eizenman
Graduate Training	23 Masters, 5 PhD
Career Research Funding	\$1.6 million
Journal Articles	37
Academic Rank	Associate Professor
Graduate Appointments	IBBME, ECE, Ophthalmology
Research Chairs	
Areas of Research	Eye trackers, eye movements, visual fields plotting, array signal processing, adaptive filters, visually evoked potentials
Selected Awards	

Name	Stephen Lapinsky
Graduate Training	1 Masters
Career Research Funding	\$850,000
Journal Articles	78
Academic Rank	Associate Professor
Graduate Appointments	Medicine, IBBME
Research Chairs	
Areas of Research	Severe acute respirator syndrome in pandemic planning; critical care management of obstetrical patients, technology application of medicine, mechanical ventilation, continuous renal replacement therapy in critical care
Selected Awards	Canadian Healthcare Manager "Who's who in Healthcare 2001" Technology Award, Jubilee Award

Name	Catriona Steele
Graduate Training	3 PhD, 4 Masters
Career Research Funding	\$1.1 million
Journal Articles	40
Academic Rank	Associate Professor
Graduate Appointments	SPL, SGS, GDRS, IBBME
Research Chairs	
Areas of Research	Dysphagia;
Selected Awards	<i>Celebrating Education Excellence Award,</i>

Assistant Professors

Name	Jan Andrysek
Graduate Training	3 Masters
Career Research Funding	\$680,000
Journal Articles	12
Academic Rank	Researcher
Graduate Appointments	IBBME
Research Chairs	
Areas of Research	Rehabilitation engineering, prosthetics, orthotics, human gait, gait analysis techniques, biomechanical modeling of gait, assistive devices.
Selected Awards	Clifford Chadderton Award for Prosthetics and Orthotics Research, The University of Toronto Patent Award

Name	Elaine Biddiss
Graduate Training	4 Masters
Career Research Funding	\$150,000
Journal Articles	14
Academic Rank	Associate Professor
Graduate Appointments	GDRS, IBBME
Research Chairs	
Areas of Research	rehabilitation engineering; assistive technologies; promotion of physical activity for disabled children; healthcare environments; physiological measurement; multi-modal feedback; prosthetics
Selected Awards	Forchheimer Prize; Norman F. Moody Award; Perkins Prize

Name	Gregory Borschel
Graduate Training	1 PhD
Career Research Funding	\$623,000
Journal Articles	30
Academic Rank	Assistant Professor
Graduate Appointments	Surgery
Research Chairs	
Areas of Research	pediatric hand, nerve, and microsurgery
Selected Awards	

Name	Joseph Cafazzo
Graduate Training	3 PhD, 12 Masters
Career Research Funding	\$2.2 million
Journal Articles	28
Academic Rank	Assistant Professor
Graduate Appointments	HPME, IBBME, Medicine
Research Chairs	
Areas of Research	human factors, clinical engineering, and health informatics
Selected Awards	MOHLTC Career Scientist Award, ASGE Award of Distinction, 1998 RSNA Cum Laude Award

Name	Teodor Grantcharov
Graduate Training	2 PhD, 4 Masters
Career Research Funding	\$ 423,000
Journal Articles	58
Academic Rank	Assistant Professor of Surgery
Graduate Appointments	MedSci
Research Chairs	
Areas of Research	Surgical education, surgical simulation, assessment of technical skills, minimally invasive surgery
Selected Awards	Honorary Medal of the Danish Surgical Society, 2008 PAIRO Trust Travel Award for Clinical Educators, The Edith and Olfert Dines Hansen's Research Award, AstraZeneca's Annual Award for Young Danish Gastroenterologist

Name	Tom Schweizer
Graduate Training	
Career Research Funding	
Journal Articles	
Academic Rank	Assistant Professor
Graduate Appointments	IBBME, Neurosurgery
Research Chairs	
Areas of Research	Cognitive neuroscience, cerebellum, stroke, focal brain lesions, neuroimaging, real-world functional outcome, neurorehabilitation, knowledge translation
Selected Awards	

Name	Bradley Strauss
Graduate Training	4 Masters
Career Research Funding	\$3.9 million
Journal Articles	129
Academic Rank	Assistant Professor
Graduate Appointments	Medicine, IBBME, MedSci, CMP
Research Chairs	
Areas of Research	Clinical studies with new interventional devices; Coronary Imaging and Interventional Procedures; In vivo models of fibrointimal hyperplasia and pharmacologic interventions; Vascular smooth muscle cell behaviour in culture; Chronic Total Occlusions: Pathophysiology, Animal Models, Novel Therapies; Venous Bypass Graft Disease
Selected Awards	Frank Berkman Memorial Lectureship, Research Scholar of Heart and Stroke Foundation of Canada, Hewlett Packard Cardiology Award, Wyeth Research Award

Name	Patricia Trbovich
Graduate Training	2 Masters
Career Research Funding	\$298,000
Journal Articles	9
Academic Rank	Assistant Professor
Graduate Appointments	IBBME
Research Chairs	
Areas of Research	understanding and addressing problems of attention, interruption, multi-tasking, and overload in the healthcare workplace
Selected Awards	OGS

Name	Robert Weersink
Graduate Training	4 Masters
Career Research Funding	\$640,000
Journal Articles	24
Academic Rank	Lecturer
Graduate Appointments	IBBME
Research Chairs	
Areas of Research	
Selected Awards	

Name	Albert Yee
Graduate Training	7 Masters, 2 PhD
Career Research Funding	\$2.5 million
Journal Articles	44
Academic Rank	Assistant Professor
Graduate Appointments	IMS, Surgery, IBBME
Research Chairs	
Areas of Research	Preclinical models of spinal surgery; Vertebral metastases; Intervertebral disc cell metabolism
Selected Awards	Sunnybrook Research Institute Merit Pool Award