IBBME’s Clinical Engineers stand at the intersection between cutting-edge biomedical engineering advancements and real-world clinical experience.

IBBME’s Clinical Engineering program, the first and leading program of its kind in Canada, prepares students for careers in academia, medicine, the health care sector and industry. With its focus on hands-on learning and professionalization, the Clinical Engineering MHSc and PhD Concentration programs immerse students in professional clinical environments while fostering a uniquely balanced foundation in biomedical engineering applications.

Engineering Rehabilitation With Intelligence: IBBME researchers are overcoming challenges facing an aging population with Intelligence.

An intelligent wheelchair is just one of the engineering marvels being designed by researchers from Associate Professor Alex Mihailidis’s laboratory at the Toronto Rehabilitation Institute (TRI). Upon completion, the Intelligent Wheelchair will be able to help patients with visual or cognitive impairments navigate home environments – the wheelchair will even be able to park itself.

Second year MHSc student Paul Oramasionwu is completing his research on one aspect of the project: he is capturing images of, and teaching the wheelchair to recognize, familiar objects in the home such as a chair, dresser or sink. Oramasionwu, who completed the internship component of his Clinical Engineering degree in the Boston area at private company Imprivata, will soon be returning to the company to help design systems to aid clinicians and patients.

Mihailidis is also designing intelligent and interactive solutions to patients’ mobility issues. An affordable, portable, tabletop rehabilitation robot will allow patients – such as those recovering from strokes – to be remotely and intelligently monitored while completing exercises at home. Now in its second clinical trial, the robot responds to a patient’s progress and adjusts accordingly.
Clinical Engineering – MHSc
The Masters in Health Science transforms students into practicing clinical engineering professionals. This unique two-year program incorporates coursework, a research thesis and an extensive internship component that delivers on two main goals: to give IBBME students real-world clinical research opportunities, and to help our students establish solid credentials and networks in the field.

Clinical Engineering – PhD (Biomedical Engineering)
In 2011 IBBME began its one-of-a-kind four-year PhD program. For this unique cross-disciplinary degree students are co-supervised by experts in engineering and clinical health environments.

At IBBME Clinical Engineering extends well beyond the classroom. As part of its MHSc degree requirements students take part in paid internships, often 2 or 3 over the course of the degree, which give our students the advantage of real-world, on-the-job training opportunities. Our students can be found all over the world: in hospitals, international government agencies, small and medium enterprises and multinational corporations.

Recent internships have included:

• Massachusetts General Hospital
• Centre for Global eHealth Innovation (University Health Network)
• Toronto Rehabilitation Institute
• Mount Sinai Hospital
• World Health Organization (WHO)
• Toronto Health Economics and Technology Assessment (THETA)
• Stryker International
• Imprivata

Clinical Engineering

ADMISSION REQUIREMENTS MHSc
Candidates for the MHSc in Clinical Engineering must hold a bachelor’s degree in engineering and a minimum grade of A- in the last two years of study. Applicants are also required to be eligible for licensure as a professional engineer to participate in internships.

ADMISSION REQUIREMENTS PhD
The PhD Concentration in Clinical Engineering is reserved for students who are eligible for certification in clinical engineering through the American College of Clinical Engineering, and must hold an undergraduate degree in Engineering and a master’s degree (any discipline) to be eligible to apply. Students who do not have a prior Clinical Engineering degree are required to take Clinical Engineering courses.

CONTACT US

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An intelligent wheelchair designed in part by MASc student Paul Oramarasiowo (pictured here).