

## Rehabilitation Research

The Toronto Rehabilitation Institute (Toronto Rehab) has one of the world's fastest growing and most comprehensive rehabilitation research programs. We are dedicated to maximizing life for people living with the effects of disability, illness and injury — and to assisting caregivers. Our research benefits people affected by conditions such as stroke, head injury, heart disease, spinal cord injury, hip fracture, cancer and Alzheimer's disease.

### Our history

Toronto Rehab's research program was launched in 2001 with a grant from the Ontario Ministry of Health and Long-Term Care and a unique mandate from the Government of Ontario to build capacity for rehabilitation research in the province and advance rehabilitation knowledge and practice through research. Toronto Rehab is a leading provider of adult rehabilitation services in Canada. We are a fully affiliated teaching and research hospital of the University of Toronto, to which many of our scientists are appointed. We also have affiliations with other universities in Ontario, as well as universities in other provinces and countries.

### Why rehabilitation research?

The need for rehabilitation research has never been greater because of:

- The rising number of Canadians who are disabled; more than half of us will be touched by disability, either personally or through someone in our immediate family circle
- An aging and growing population; the elderly are the fastest growing segment of our population
- A rise in the prevalence of chronic disease
- Medical advances that are saving and prolonging lives
- Demands faced by informal caregivers; over three million Canadians voluntarily care for someone affected by disability or aging

### What is rehabilitation research?

Rehabilitation research provides practical solutions to everyday problems faced by people with disabilities and those encountering older age. Our discoveries are helping to:

- Restore function to a high level using new treatments and technologies
- Facilitate a quicker return to the community and work
- Support people safely in their homes for longer
- Maximize quality of life, participation and productivity
- Develop new and marketable assistive technologies, devices and products
- Ensure that healthcare is delivered in the best way possible
- Prevent injury and illness
- Assist those who care for people with disabilities

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## Toronto Rehab's Rehabilitation Research Program

### Major areas of study

Scientists at Toronto Rehab conduct research in eight key areas: activity; cardiopulmonary fitness; cognition; communication; mobility; optimization of the rehabilitation system; sleep; and technology. Researchers and students come from a wide range of disciplines. Many have engineering, computer science or clinical backgrounds.

**Vice President, Research:** Geoff Fernie, *PhD, MIMechE, CEng, PEng, FCAHS*

**iDAPT Project Manager:** Dayle Levine, *BPHE*

**Manager, Research Services:** Lois Ward, *AOS (NY)*

### 2009/10 Research Faculty

Senior Scientists: 13

Scientists: 14

Adjunct Scientists: 58

Trainees (postdoctoral fellows and graduate students): 169

Research Support: 97

### 2009/10 Research Funding

Ministry of Health and Long-Term Care: \$3,000,000

Toronto Rehab Foundation: \$1,100,000

External Research Grants (includes overheads): \$7,270,244

Total: \$11,370,244

### 2009/10 Publications

Book chapters: 3

Journal papers: 254

## Toronto Rehab's Rehabilitation Research Program

Toronto Rehab scientists are based at several sites, including:

- University Centre (550 University Ave.)
- Rehabilitation Sciences Building, University of Toronto (500 University Ave.)
- Lyndhurst Centre (520 Sutherland Dr.), home to Canada's largest spinal cord rehabilitation program

Toronto Rehab is building one of the most advanced rehabilitation research environments in the world. iDAPT (Intelligent Design for Adaptation, Participation and Technology) is a \$36 million research initiative that will create an integrated network of research facilities where ideas can be cultivated, tested and applied in the real world leading to practical new therapies and assistive devices.

By September 2011, iDAPT facilities at Toronto Rehab's University and Lyndhurst Centres, and at the Rehabilitation Sciences Building of the University of Toronto, will be fully operational with 14 labs and several other research spaces — in total, 60,000 square feet of renovated and newly constructed space. The centrepiece will be an underground lab with a unique hydraulic motion simulator that can recreate winter challenges, such as ice and snow-covered surfaces. Many iDAPT labs are already open.

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Funding for iDAPT has been provided by the Canada Foundation for Innovation, Ontario Ministry of Research and Innovation, Ontario Innovation Trust, Toronto Rehab Foundation, and corporate partners. For details, please visit [www.torontorehab.com/research](http://www.torontorehab.com/research).

## Commercialization

Toronto Rehab has close links with private industry. Our industry-friendly Club program and state-of-the-art design and prototyping facilities help to accelerate the movement of products into the marketplace. We are also creating jobs and wealth in our community by providing the emerging assistive devices sector in Ontario and across Canada with an important boost and competitive edge.

## Other highlights

Toronto Rehab actively involves consumers in research through the Toronto Rehabilitation Institute Scholarship in Rehabilitation-related Research for Graduate Students with Disabilities, supported by TD Bank Financial Group.

- The Ontario Rehabilitation Technology Consortium (ORTC), a network of assistive technology researchers, is headquartered at Toronto Rehab.
- The ORTC and Center for Inclusive Design and Environmental Access at the University of Buffalo: the State University of New York are co-leading a Rehabilitation Engineering and Research Center on Universal Design, funded by the U.S. National Institute on Disability and Rehabilitation Research.
- Toronto Rehab is a member of MaRS Innovation.
- Toronto Rehab and March of Dimes Canada are co-hosting the second Festival of International Conferences on Caregiving, Disability, Aging and Technology to be held from June 5 – 8, 2011.

Toronto Rehab researchers work closely with clinical professionals and others who care for our patients, and with valued partners and research collaborators across Canada and around the world.

## For further information:

To find out more or to download a copy of Toronto Rehab's annual research report highlighting some of our many research accomplishments, please visit [www.torontorehab.com/research](http://www.torontorehab.com/research) or contact Lois Ward, Manager, Research Services, at 416-597-3422, ext. 7600 or [ward.lois@torontorehab.on.ca](mailto:ward.lois@torontorehab.on.ca).