CANWHEEL
improving wheeled mobility of older adults

Welcome to the CanWheel Corner!
A place to find out what is going on in the CanWheel world.

TEAM UPDATE

Welcome to the Canwheel team, Geneviève!

Geneviève is a Master's student working under the supervision of Dr. Alex Mihailidis in the Intelligent Assistive Technology and Systems Lab at the University of Toronto. Geneviève holds a bachelor's degree in Biomedical Engineering from Polytechnique Montréal. Her research interests include robotics, computer vision, and human-computer interaction.

2014 CANWHEEL ANNUAL TEAM MEETING

This year's CanWheel Annual Team Meeting was held on **Thursday, June 12th, 2014** in Indianapolis. As part of the RESNA 2014, we also hosted an open audience pre-conference session in the afternoon, which was well attended and well received. Thanks to all our presenters and the interested RESNA attendees – some great discussion was had indeed! Thank you, as well, to the conference organizing committee, for making the room available to us for the day!

PROJECT UPDATES

P1-P3
The Wizard of Oz (WoO) study continues to move along well. Pooja Viswanathan and an extensive team of research assistants finished data collection using our intelligent wheelchair with 10 participants (long-term care residents with mild cognitive impairment) at the end of 2013 and are currently analysing the data and preparing manuscripts. Bikram Adhikari also continues data collection for the WoO sub-study examining the back-in parking module for his thesis. As well, a workshop has been accepted to the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2014 conference entitled "A Wizard-of-Oz Intelligent Wheelchair Study with Cognitively-Impaired Older Adults: Attitudes toward User Control" involving several of our team members and trainees.

P2
The data collection is nearly finished! All sites have completed sessions up to the one year mark, while Vancouver, which is testing over two years, has finished all 1.5 year time points and only has three participants left to complete their 2 year mark. Data collection will be finishing up in mid-October 2014. In total we have collected data from 129 wheelchairs users and 34 caregivers in this longitudinal study, including qualitative interviews of a sub-sample of 20 individuals. Currently, several measurement properties papers are in progress and a manuscript looking at one measure, the Wheelchair Skills Test Questionnaire

Power Version, was submitted to Disability & Rehabilitation: Assistive Technology, while another examining the Late Life Disability Index was accepted in Archives.

P4

Team members are currently preparing two manuscripts based on information gleaned from a scoping review of data-logger use literature in manual wheelchairs and power wheelchairs. A data-logger is a collection of sensors and storage system, which can be attached to a wheelchair and can record a variety of aspects of wheelchair behavior (e.g., how fast or far the wheelchair goes over the course of several days). The next step is to develop a series of surveys, informed by the scoping review, to gain the perspectives and feedback of consumers, clinicians and researchers interested in data-logger use.

P5

Our team sites across Canada are making great progress on data collection! Data collection has been completed in both Vancouver and Montreal, with the rest of the sites nearing finished as well, which will wrap up this phase of the study. Currently we have N=116 who have completed T1, 110 who have completed T2 and 105 who have completed T3, satisfaction survey data has been collected in a sub-sample of participants as well. Once data collection is complete, the team plans to start preparing publications in the fall and be ready to present the main findings at RESNA 2015! We are also currently exploring some ideas for additional sub-studies related to P5.

KUDOS

 A huge around of applause are in order for several of our team members!

- Dr. Rosalie Wang whose paper, titled: "Power mobility with collision avoidance for older adults: User, caregiver, and prescriber perspectives", was submitted to the Age and Prize program. Her paper was reviewed and judged meritorious!

- Emma Smith, who won the 2014 RESNA Rookie Award (recognizes a new member who has made significant contributions, provided leadership, and made an impact to RESNA)

- Dr. Alex Mihailidis, who won the RESNA Fellow Award (Recognizes a member who has made long term and substantial contributions to the fields of rehabilitation or assistive technology as well as significant contributions to RESNA)

CANWHEEL WEBSITE

We are excited to announce that our website has been given a make-over!!! Check it out and let us know what you think!

CANWHEEL FACEBOOK PAGE

CanWheel is getting social! Please "Like" our Facebook page here: https://www.facebook.com/canwheel

TRAINEE SPOTLIGHT

Alex Korotchenko
(PhD Student, University of British Columbia)

Tell me a bit about the research you're currently working on.
I am currently looking at the everyday lived experiences of older adults who use canes and walkers on a regular basis. This past year, I conducted in-depth, qualitative sit-down and walk-along interviews with 24 men and women of diverse backgrounds and physical abilities. I am now in the process of analyzing my data.

What would you say are the implications of this research?
It is my hope that my research will help to better our understandings of what it means to be an older adult with a motor disability. I hope that this knowledge can be used to create more supportive communities, better mobility devices and transportation options, and safer and more accessible spaces for older adults with disabilities - which will ultimately benefit all of us in the future.

What got you into this line of research?
My involvement in the CanWheel project, and in particular, conducting interviews with older power wheelchair users, opened my eyes to the multitude of spatial and social barriers that individuals who use mobility devices encounter each day. As an able-bodied person, I had never considered how, for example, the height of elevator buttons or the construction of library bookshelves privileges certain bodies while excluding others. While there is a growing body of research on wheelchair and power wheelchair use in later life, I was curious about individuals who used more 'low-tech' devices, such as canes and walkers, and how their experiences might be similar to or different from those of older adults who employed wheeled mobility devices.

Tell me a "fun fact" about you.
I am not sure this qualifies as a 'fun' fact, but I experienced some impaired mobility of my own during my data collection – first as a result of a back injury, and then a foot fracture. I suppose this could be viewed as one way of building rapport with participants, although I do not particularly recommend it!

CONFERENCES

SWAT: Smart Wheelchairs for Assessment and Training of Older Adults

When: October 6-7 2014
Where: University of Toronto

In partnership with CanWheel, the goal of the this workshop is to explore the use of Smart Wheelchairs for Assessment and Training (SWAT) of older adults by bringing together an international group of engineers, computer scientists, and therapists who have been involved in powered wheelchair interventions.

The workshop will apply an integrated knowledge translation approach with the objectives of:
- identifying future research directions in applying state-of-the-art smart wheelchair technology to assessment and training,
- designing protocols for smart wheelchair data collection/generation, and;
- developing methods for sharing smart wheelchair data with clinicians in a manner that is meaningful, impactful and clinically valid.

This workshop has been funded by a CIHR Meetings, Planning & Dissemination grant with Drs. Alex Mihailidis, Bill Miller, Pooja Viswanathan, and Rosalie Wang.

International Conference on Intelligent Robots and Systems

When: September 14 – 18 2014
Where: Chicago, Illinois

The P1-P3 team will represent CanWheel this year with an accepted workshop entitled: A Wizard-of-Oz Intelligent Wheelchair Study with Cognitively-Impaired Older Adults: Attitudes toward User Control

Happy Summer from the CanWheel Research Team!

Please contact Kate Keetch (kate.keetch@vch.ca) with comments, questions or Kudos ☺