



## AGE-WELL Strategic Investment Program – Spring 2020

- 1. Project Title:** Accelerating Commercialization of the TOM (Top of Mind) a Personal Aide for Activity and Medication Scheduling and Reminders  
**Project Lead(s):** Jeffrey Jutai, University of Ottawa  
**Partners:** JLG Health Solutions  
**Funding Amount:** \$50,000  
**Primary Challenge Area:** Health Care & Health Service Delivery

**Summary:** This project will improve the commercial success of our new product called Top of Mind (TOM™), a personal aide for scheduling and reminding about important daily activities and medications. TOM™ is intended for people with mild cognitive impairment to help them to be self-sufficient. It will help reduce medication errors and hospital visits by improving compliance with prescriptions. It will help older people to age in place by making them more self-sufficient in performing activities of daily living related to caring for themselves. TOM™ is designed also to reduce stress and needs for respite resources for family caregivers. It does it by giving caregivers timely information about how their loved one is doing, involving them directly in scheduling and monitoring activities, and reduce the need for them to travel, especially if they live far from their loved one. We will launch a social media campaign that will make our product known in the social media networks of older people and their caregivers who are potential users. We will examine how TOM™ can improve family caregiver interactions with users about things like giving consent, taking meds, and keeping appointments, without confusing an older adult. We will better attune our marketing messages and materials to the needs and preferences of family caregivers. We will develop reliable and valid measures of outcomes from using TOM™.

- 2. Project Title:** Preventing falls and injuries in older adults through education and sharing of a video database of real-life falls among a community of practice  
**Project Lead(s):** Stephen Robinovitch, Simon Fraser University; Fabio Feldman, Fraser Health Authority; Dawn Mackey, Simon Fraser University; Joanie Sims-Gould, University of British Columbia  
**Partners:** Canadian Falls Prevention Curriculum, Fraser Health Authority  
**Funding Amount:** \$25,000  
**Primary Challenge Area:** Health Care & Health Service Delivery

**Summary:** Falls are the number-one cause of injuries in older adults, and are especially common among seniors in long-term care (LTC). Lack of evidence on “how falls occur” in this setting is a barrier to prevention. This project will translate evidence to a community of practice (older adults, care providers, researchers and industry) generated from the “falls video database” generated under our previous award (WP5.2). The database consists of video footage and clinical incident reports of 2579 falls experienced by 692 older adults in LTC. Under Aim 1, we will develop educational modules, in the form of short videos that incorporate case studies of real-life falls to convey best practices in fall and injury prevention related to physical activity, exercise, environmental modifications, assistive devices and wearable hip protectors. The modules will be hosted by the Fraser Health Authority (FHA) LearningHub and the Canadian Falls Prevention Curriculum (CFPC). Under Aim 2, we will share video footage of real-life falls for reuse and innovation by researchers, educators and industry through the Databrary network. By mobilizing knowledge and evidence from our real-life falls database, our efforts should improve care delivery, foster innovation in prevention strategies, and ultimately improve the quality of life for older adults.



**3. Project Title:** Health Sensing Algorithms for Pressure Sensitive Mats - Commercialization  
**Project Lead(s):** Rafik Goubran, Carleton University; Frank Knoefel, Bruyere Research Institute  
**Partners:** Amylior Inc., Hexyoo Scientific Inc.  
**Funding Amount:** \$50,000  
**Primary Challenge Area:** Autonomy & Independence

**Summary:** Smart homes of the future will be able to monitor the health and function of the residents. Since people spend about a third of the day in bed, that location would be an ideal location to provide passive monitoring. Our group has been working on techniques to extract mobility information (e.g. turning and exiting) and such health parameters as breathing and risk of pressure ulcer formation from pressure sensors placed under the mattress of a bed for over a decade. Currently there are a number of bed sensors on the market that can detect some vital signs, but there are none that can provide location-based information required for more complex analyses for mobility change and pressure ulcer risk. This project will strengthen the partnership between the AGE-WELL researchers and a Canadian company specializing in the production of a patented visco-elastic polymer gel. The researchers have been collaborating with Hexyoo Scientific Inc. to combine the sensing ability of a new infra-red technology and the comfort of the gel to create a new pressure sensing mat. This project focuses on formalizing the partnership to prepare for the production of the new bed mat for future smart homes.

**4. Project Title:** Acceptance and reliability of digital (web-based) version of Alberta Rating Index for Apps (ARIA)  
**Project Lead(s):** Lili Liu, University of Waterloo  
**Partners:** Organization for Bipolar and Affective Disorders  
**Funding Amount:** \$25,000  
**Primary Challenge Area:** Autonomy & Independence

**Summary:** There are over 300,000 mobile apps for health. These apps can enhance self-management and access to health services, provide health information, and facilitate communication between patients and healthcare providers. However, not all mobile health apps have acceptable quality or are useful. As the sale of apps is not regulated, there are minimal safeguards to protect users from apps with low quality or harmful content. To evaluate the quality of health apps, users are limited to available reviews and ratings that may not be trustworthy. We developed the Alberta Rating Index for Apps (ARIA) that offers a way for users, including older adults, family caregivers, and health service providers, to evaluate the quality and usability of health apps based on nine quality criteria. In this proposed project, we will develop and examine the acceptance and reliability of a web-based version of ARIA in English and French. Web-based ARIA calculates a rating score for each app and allows users to visualize areas of strength and weakness based on users' ratings. We will use the ratings to create a crowd sourced repository of mobile health apps and share the summary of ratings with website visitors.



**5. Project Title:** 4VRYoung: Using Immersive VR Travel Videos to Motivate Arm and Leg Exercise

**Project Lead(s):** Mark Chignell, University of Toronto

**Partners:** Ambient Activity Technology, Mon Sheong Private Care, Toronto Public Library, Yee Hong Geriatric Centre

**Funding Amount:** \$48,000

**Primary Challenge Area:** Healthy Lifestyles & Wellness

**Summary:** Physical exercise is known to improve longevity and cognitive status, but most people get insufficient exercise and this problem worsens with age. Lack of exercise can lead to frailty, falls, and cognitive impairment. VR (virtual reality) has been used to promote exercise, in contexts where it occurs naturally as part of an immersive experience (e.g., rowing). However, VR solutions tend to focus on the upper body and there is an urgent need for products that can motivate people to exercise their legs as well as arms. We will create two products that motivate people to pedal in order to move through engaging travel videos. The first product ("Forever Young" or more simply 4VRYoung) will require people to pedal in order to move through engaging 360 degree travel videos (e.g., a helicopter ride over Manhattan) presented either immersively in VR goggles, or else on large screens. The second product (2RaceWithMe) motivates hand and/or foot exercise using engaging video courses. People can pedal alone on these courses or race against others in their care home, or with people in remote locations. These products should revolutionize exercise programming for older people by making exercise meaningful and an integral part of scenic travel experiences.

**6. Project Title:** Knowledge Mobilization by Social Media

**Project Lead(s):** Ron Baecker, University of Toronto

**Partners:** Famli.net Communications Inc., YouAreUNLTD, Sunnybrook Veterans Centre

**Funding Amount:** \$25,000

**Primary Challenge Area:** Staying Connected

**Summary:** There is a research consensus that isolation and loneliness among older adults is a public health crisis, threatening quality of life and lifespan. AGE-WELL research project A-W4.1 set out to "design, create and commercialize communications technologies for older adults focusing on reducing social isolation". We published research papers and conference presentations at reputable international venues. We built a company and a unique communications solution, FamliNet.app that attracted early stage customers. They are like Richard Radcliff, an 89-year-old Veteran, who said, "I use it every day, it's meant the world to me". However, there is a large gap between research success and wide commercial use. Bridging that gap requires communicating the success of AGE-WELL research to large numbers of everyday people -- through channels they use, in language and media they find engaging.