Turning ideas into reality
Our Vision
Canada’s leadership in technology and aging benefits the world.

Corporate Profile
AGE-WELL NCE Inc. (“AGE-WELL”) is a federally-funded Network of Centres of Excellence established in 2015 to support Canadian research and innovation in the area of technology and aging. AGE-WELL is dedicated to the development and delivery of technologies, services and policies/practices that benefit older adults and caregivers. Our aim is to help older Canadians maintain their independence, health and quality of life through technology-based solutions that increase their safety and security, support their independent living, and enhance their social participation.

As Canada’s technology and aging network, AGE-WELL brings together more than 200 funded and affiliated researchers from 40 universities and research centres across Canada. Over 250 industry, government and non-profit partners work closely with us on solutions for healthy aging. AGE-WELL also trains the next generation of leaders in the field of technology and aging, with almost 500 trainees now in our ranks. Our research projects are organized into eight research themes [called Workpackages], supported by four Crosscutting Activities in knowledge mobilization, commercialization, team-working and training.

Our Mission
To develop a community of researchers, older adults, caregivers, partner organizations and future leaders that accelerates the delivery of technology-based solutions that make a meaningful difference in the lives of Canadians.

Our Values

Excellence
Based on a strong and leading scientific research foundation

Collaborative impact
Using a transdisciplinary approach, we share knowledge, ideas and resources across disciplines and stakeholder groups to generate better outcomes

Capacity-building
We train the best and brightest academic and industry talent

Leadership
We are recognized globally in the area of technology and aging

Innovation
We are engaged in a continuous process to create new ideas and solutions

Integrity
We uphold the highest ethical and intellectual standards in our research and business activities

Equity
We are committed to equity, diversity and inclusion in all aspects of our network.
Acknowledgements

AGE-WELL gratefully acknowledges the support of its funder:

Government of Canada
Networks of Centres of Excellence
Gouvernement du Canada
Réseaux de centres d’excellence

An initiative of Canada’s research granting agencies
www.nce-rce.gc.ca

The NCE Secretariat manages three national programs: Networks of Centres of Excellence (NCE); Centres of Excellence for Commercialization and Research (CECR); and Business-Led Networks of Centres of Excellence (BL-NCE). Through multi-disciplinary partnerships between academia, industry, government and not-for-profit organizations, NCE programs focus a critical mass of research resources on social and economic challenges, commercialize and apply research breakthroughs, increase private sector R&D, and train highly qualified people. Since its inception in 1989, NCE funding has helped create almost 2,310 companies; supported the development of more than 54,000 highly qualified personnel (HQP); invested more than $2.3 billion in research, commercialization and knowledge translation; and leveraged $2.46 billion in partner support to enhance the lives of Canadians.

And the support of its host institution:

UHN Toronto Rehabilitation Institute
A MESSAGE FROM
THE SCIENTIFIC DIRECTORS

The other day, we received an email from a woman who describes herself as a healthy and active older Canadian. She says she knows that “changes will happen—planned and unplanned” and appreciates AGE-WELL’s dedication to delivering practical solutions.

At AGE-WELL, our focus is on helping older adults stay healthy and independent for as long as possible, while assisting those living with disease and disability. We believe that technology can help all of us to age well—and support caregivers.

AGE-WELL is the only pan-Canadian network that brings everyone together—researchers, older adults, caregivers, partner organizations and future leaders—to accelerate the delivery of technology-based solutions that make a meaningful difference in the lives of Canadians.

In three short years, AGE-WELL has tripled in size. Today, our network includes more than 200 researchers from 40 universities and research centres across Canada. We have over 250 industry, community, government and academic partners who share our vision that Canada’s leadership in technology and aging benefits the world.

These are meaningful partnerships. Consider that every research project has at least one industry or community partner who makes a significant in-kind or cash investment. End-users take part in these projects. In fact, more than 4,500 older adults and caregivers are involved. This is how we ensure our products are practical and useful.

We are proud of the fact that 66 project teams across Canada are now developing over 70 products that increase safety and security, support independent living and enhance social participation. These products include technologies, services and policies or practices that will help to get our solutions into the hands of people who need them.

AGE-WELL is also benefiting the Canadian economy through our industry partnerships and startups. We now support 12 startups that are commercializing and launching products, creating wealth and generating jobs.

Our biggest investment is in training the innovators of tomorrow who will make a positive difference for aging in Canada for generations to come. AGE-WELL’s unique training program called EPIC (Early Professionals, Inspired Careers) now boasts almost 500 highly qualified personnel (HQPs), including alumni, from institutions across Canada and beyond. These bright young researchers are landing jobs in industry, academic and community organizations.

Building on this success, we are planning for the next iteration of AGE-WELL after our current mandate ends in 2020. We will continue to ensure that great science is paired with real-world impact. A major renewal initiative is well underway and will allow us to take what we have done and go on to even greater success in 2020-2025. In the future, AGE-WELL will continue to drive culture change in this field, to influence policy and practice, to create support structures required by researchers and partners, and to invest in R&D that will bring social and economic benefits to Canada. Stay tuned as we roll out our vision for AGE-WELL 2.0 in the months ahead.

AGE-WELL is extremely grateful to our funder, the Networks of Centres of Excellence (NCE). We also thank the Toronto Rehabilitation Institute – University Health Network for being our host institution. We are indebted to the AGE-WELL Board of Directors, committee members, researchers, trainees, staff members, partner organizations, older adults and caregivers who have helped AGE-WELL to accomplish so much.

Dr. Alex Mihailidis and Dr. Andrew Sixsmith
Joint Scientific Directors, AGE-WELL
A MESSAGE FROM
THE CHAIR OF THE BOARD

More and more, AGE-WELL is seen as an authority in Canada and internationally in the field of technology and aging.

This past year, AGE-WELL was out there interacting with municipal, provincial and federal representatives. In May 2018, we held our first Day on the Hill, sponsored by Senator Art Eggleton, and met with numerous MPs and senior ministerial staff. Throughout the year, AGE-WELL members took part in discussions that are informing public policy. Our researchers did twice as many media interviews in 2017, reflecting interest in their expertise and research.

Internationally, AGE-WELL has established itself as a leader in technology and aging—and an authority that is called upon by global organizations, sharing knowledge, partnering and leading on research and training events. Network members were invited to take part in two high-profile Canadian missions to Asia.

Last year also marked a new level of engagement at the local level. AGE-WELL launched innovation hubs in Fredericton, New Brunswick and in Ottawa. These hubs bring together local partners to focus on technology and aging policy, and sensors and analytics, respectively. A third innovation hub will be officially opened in the near future.

AGE-WELL will continue to play a strong national and international role, raising Canada’s profile as a leader in technology-based solutions that benefit people everywhere.

Mimi Lowi-Young
Chair, AGE-WELL Board of Directors

A MESSAGE FROM
THE MANAGING DIRECTOR

AGE-WELL is all about creating practical solutions that directly impact people’s lives. We work hard to ensure that our research program is solution-driven.

Every project is evaluated using a product readiness level scale developed by AGE-WELL. This allows us to carefully monitor progress toward real-world outcomes.

Our Core Research Program, which is comprised of 27 projects, has now entered an exciting new phase focused on commercialization and knowledge mobilization.

We also remain solution-focused by prioritizing support for startups that are delivering tangible products.

Last year, AGE-WELL co-hosted a Canada-wide ideathon competition that brought together people from different backgrounds—including post-secondary students, entrepreneurs and older adults—to advance solutions that will produce social and economic benefits. The AGE-WELL–HACKING HEALTH National Ideathon, held in five cities, drew over 300 participants.

Our newest event is the 2018 AGE-WELL National Impact Challenge. This competition calls on inventive minds across Canada to compete for over $100,000 in prizes. The challenge: to come up with new and innovative ideas for technology-based solutions that can benefit older adults and caregivers.

Many of AGE-WELL’s own solutions were on display at our 3rd Annual Conference in Winnipeg last year. Dozens of demos included socially assistive robots, health monitoring devices and smart home systems that promote aging-in-place and reduce pressures on the health-care system and long-term care. It was an inspiring three days of knowledge sharing and networking.

At AGE-WELL, we challenge ourselves every day to drive innovation and to change the future of aging.

Bridgette Murphy
Managing Director, AGE-WELL
AGE-WELL by the Numbers
as of September 2018

Highly Qualified Personnel (HQP)

# of Researchers: 200+

Professionals: 485
40% (includes research associates, technicians and summer students)

Postdoctoral Fellows: 398
16%

Doctoral Candidates: 2017-2018
22%

Master’s Candidates: 2016-2017
22%

# of Publications: 150+

# of Network Partners
Industry
Government
Community
254

# of Innovators of Tomorrow Certificates awarded
175
# of Research Projects
76

# of Older Adults and Caregivers involved with AGE-WELL projects
4,500+

# of Jobs created by startups
70+

# of AGE-WELL-supported Startups
12

# of Member Universities and Research Centres across Canada
40

# of AGE-WELL Solutions in each stage of the Product Readiness Level (PRL) Scale:

- Innovation Research
- Incubator
- Prototype
- Experimental Implementation
- Outcomes

6  7  16  26  17
Bringing Products to Market

What does the future of aging look like?
Take a peek at some of the innovations being created by AGE-WELL research teams:

Social robots
In the near future, social robots like Casper will be able to assist older adults with cognitive impairment by prompting them to do everyday tasks such as meal-making. Social robots are also being designed to play stimulating games and make virtual medical visits possible. Drs. Goldie Nejat (University of Toronto) and François Michaud (Université de Sherbrooke) are working with CrossWing Inc. to bring a new social robot to market within two to five years, supported by AGE-WELL.

Bladder relief
Overactive bladder is an incurable urinary disorder that affects up to 18 per cent of Canadian adults. It can significantly disturb sleep, cause anxiety and social withdrawal, and even lead to falls from rushing to the bathroom. A novel treatment developed by Drs. Paul Yoo and Sasha John of the University of Toronto improves symptoms without any reported side effects, study results show. The treatment involves non-invasive self-administered electrical stimulation of the saphenous nerve in the leg. The researchers are working to make it available soon.
Hip protectors like this one have been shown to reduce the risk of fractures from falls by as much as 80 per cent, but the challenge is convincing people to wear them consistently. Instead of garment-based hip protectors, which need frequent laundering, a team at Simon Fraser University has developed stick-on pads that can be worn for up to 21 days. AGE-WELL investigators Drs. Steve Robinovitch and Fabio Feldman are working with Blue Tree Medical to get the product to market in coming months.

Next-generation hip protectors

WinterLight Labs has created a technology that can monitor cognitive health through natural speech. The tool records short samples of a person’s speech as they describe a photo on a screen. In the laboratory, WinterLight’s platform can reliably identify Alzheimer’s disease, Parkinson’s disease and aphasia with between 85 and 100 per cent accuracy, says AGE-WELL investigator Dr. Frank Rudzicz, co-founder of WinterLight and a scientist at Toronto Rehab – UHN and the Vector Institute. The technology will be available for sale after clinical testing is completed by WinterLight, an AGE-WELL-supported startup.

A speech analyzer

A new website is helping consumers choose GPS technologies that can locate loved ones with dementia who wander. In 2014, the number of people reported missing in Canada due to wandering was 1,528. The site allows caregivers to compare GPS-based locator devices and other types of tracking technologies. The project was led by Dr. Lili Liu of the University of Alberta, with support from AGE-WELL and the Alzheimer Society of Ontario (ASO). It is part of ASO’s Finding Your Way® program, funded partially by the Province of Ontario.

Website for GPS technologies
An obstacle-detection system

Cars have sensors and now wheelchairs can too. This add-on system can transform a regular wheelchair into a “smart” wheelchair able to help prevent collisions. The novel system, developed by AGE-WELL-supported Braze Mobility Inc., uses sensors to detect obstacles and provides visual, audio or vibration feedback to drivers. Several versions can now be ordered online at www.brazemobility.com.

A virtual gym

VirtualGym provides personalized exercise instruction and feedback to promote physical and cognitive health in older adults. The computer-guided system features an on-screen virtual coach for each participant. VirtualGym is designed for older adults who have chronic conditions, early-to-moderate dementia, mobility and other challenges that can prevent them from taking part in group-exercise activities. Dr. Eleni Stroulia and her team at the University of Alberta have tested the system and are now adding more exercises.
Digital games to connect

Two digital games designed to encourage social connectedness and learning for seniors are available online in French and English and others are being tested. SolitaireQuiz has been played 1,500 times online and TicTacQuiz has been played 2,000 times. The games can be enjoyed individually, in group settings or with family members, says Dr. David Kaufman of Simon Fraser University, AGE-WELL project co-lead with Dr. Louise Sauvé at SAVIE Public Research Centre.

Protecting caregivers’ backs

One of the biggest risks faced by caregivers is injuring their backs while helping loved ones with activities such as dressing, bathing and transferring. PostureCoach is a wearable device that teaches caregivers to protect their backs while helping others. It provides real-time feedback through a vibration or audio signal when a caregiver is in a position that puts them at high risk for back injury. Dr. Tilak Dutta of Toronto Rehab – UHN is developing PostureCoach in partnership with Saint Elizabeth Health Care.

Steadi-One

Hand tremors affect millions of people worldwide and can make it difficult to write, drink from a cup without spilling, use a keyboard or cell phone. Steadi-One “intelligently” stabilizes the wrist joint in people living with Essential Tremor and Parkinson’s disease. Developed by Steadiwear Inc., the glove uses a combination of vibration damping and nano-technology. Building on promising beta results, clinical testing is underway and plans call for Steadi-One to come to market by the end of 2018.
AGE-WELL welcomed the Honourable Ginette Petitpas Taylor, Minister of Health, to our host institution, Toronto Rehab – UHN, on October 2, 2017. Minister Petitpas Taylor met with researchers and trainees from AGE-WELL and Toronto Rehab. The group is shown here with the giant motion simulator in Toronto Rehab’s Challenging Environment Assessment Labs.
**Strong science is common to all AGE-WELL research. So is the focus on real-world impact.**

That’s why we refer to our innovations as “products.” Our researchers are always thinking about the outcome of their research. It could be a new technology, service, policy or practice. The point is it must get into the hands of people who will use it to improve quality of life, and create social and economic benefits.

Last year, following a rigorous review by our International Scientific Advisory Committee, we renewed our Core Research Program, which is the largest funded stream in the network. More than $5.3 million has been invested from 2018-2020 in 27 projects that address pressing needs of older people and caregivers. The focus of these projects has now shifted to commercialization and knowledge mobilization.

Over the past two years, we have also diversified our research portfolio by investing in shorter-term, early-stage and post-discovery projects through our Catalyst Funding Program and Strategic Investment Program [Accelerator].

**Achieving outcomes**

In this chapter, you will read about some of the remarkable products being developed by 66 research teams across Canada.

Our research is producing results across the entire spectrum of the innovation pipeline, from discovery to post-discovery. In all, there are more than 70 products in development. Some are already on the market and having an impact on people’s lives.

Turning ideas into real-world impact doesn’t just happen. To make this possible, our research has to break down the silos and barriers that have traditionally limited what we can achieve. We are doing this through a “transdisciplinary” approach that means researchers, older people, industry and public sector partners work together to create solutions that support healthy aging.

A lot of thought goes into the ethical, social and cultural aspects of technology, and how public policy can help to get it adopted. AGE-WELL also supports research involving Indigenous populations. On page 39, you will meet a researcher who is looking at technology needs of Indigenous older adults in rural and remote communities who require dementia care.

Research activity has also intensified with the launch of two National Innovation Hubs in 2017—one in Fredericton, New Brunswick and the other in Ottawa, Ontario. We have stories about their exciting work on the pages that follow. A third innovation hub will be officially opened soon. The aim of AGE-WELL hubs is to engage a range of stakeholders and end-users in a specific location, fostering more efficient development, testing and delivery of products and services that will support healthy aging.
Sensor systems for the smart home

Mobility and memory problems are among the most common challenges experienced by older adults—a reality that is not lost on Mary Huang, an engineer and MBA who has looked after her aging parents for several years.

The Ottawa resident stopped travelling and then took time off work to care for her father Peter, 90, who has vascular dementia and Alzheimer’s disease, and her mother Anna, 86, who suffers from vascular dementia, congestive heart failure and has had six falls in the last six months.

“I don’t sleep very well these days,” says Huang, who’s hoping to soon find relief in the vast array of new technologies being developed by an AGE-WELL National Innovation Hub called Sensors and Analytics for Monitoring Mobility and Memory (SAMS). It opened in Ottawa in November 2017 to address mobility and memory challenges among older people.

A collaboration between AGE-WELL, Bruyère Research Institute and Carleton University, SAMS features an apartment laboratory resembling a typical home setting located at Élisabeth Bruyère Hospital and a design, development and test site at Carleton. The hub brings together health professionals, researchers, industry, non-profits, older people and caregivers to develop smart home systems and other technologies that keep seniors as healthy, safe and independent as possible.

“As people age, many develop health problems, as well as challenges with cognition and mobility,” says Dr. Frank Knoefel, a physician in the Bruyère Memory Program at Élisabeth Bruyère Hospital and senior investigator at Bruyère Research Institute. The technological solutions developed at SAMS use economical off-the-shelf equipment like sensors which, when adapted and enhanced, can provide important information to family and health professionals. It’s all with the aim of supporting aging-in-place.

It can be as simple as a sensor placed over a stove to indicate that a pot has boiled dry. Other sensor systems can light the way to the bathroom or perceive wandering behaviours [see page 15]. Pressure-sensitive mats positioned under a bed mattress can track how much someone moves during sleep. The idea is to prompt action to help avoid pressure sores, a significant concern for people who cannot easily change positions. Sensor mats can also show whether a person is unstable when rising from the bed.

Other devices are being developed to monitor and predict what is happening with people’s cognitive abilities, based on their completion of daily activities.
and their ability to use everyday objects. “It covers the whole spectrum,” says Dr. Rafik Goubran, a professor of engineering and vice-president, Research and International, at Carleton. “We are integrating many sensors together to come up with realistic solutions to real problems. With the data coming from these non-invasive sensors, it will be possible to flag any signs of problems among older adults before they become serious.”

Dr. Bruce Wallace, executive director of SAM3 and an adjunct professor of computer and systems engineering at Carleton, says the research has already expanded from the “living laboratory” apartment at Bruyère to trying out systems in people’s homes. It also involves community partners such as the Perley and Rideau Veterans’ Health Centre and the Champlain Local Health Integration Network, as well as industry partners like IBM, Telus and Aerial Technologies in Montreal.

The sophisticated systems emerging from SAM3 will support quality of life, while creating economic benefits, says Dr. Heidi Sveistrup, interim CEO and chief scientific officer at Bruyère Research Institute. “Issues around privacy and the collection of data are getting careful consideration,” she notes.

For her part, Huang says she hopes the new sensor technologies will keep older people like her parents at home, given the benefits they get there, as well as the high cost of private retirement homes and limited availability of long-term care. “We need solutions that are high quality, reliable and don’t break the bank,” she says. “There’s a lot of challenges ahead, but we are making progress.”

**Night wandering**

Night-time wandering is a common and worrying problem for people with dementia, putting them at risk for injury—even death if they leave home—and causing sleep disruptions for their families and caregivers.

Two research projects supported by AGE-WELL use sensors, special lighting and prompts to detect people’s movements when they get out of bed and encourage them to return to sleep.

“People need some cognitive assistance late at night,” says Dr. Hélène Pigot, a computer science professor at the Université de Sherbrooke. She is building a platform of sensors and prompts that lets family or care partners choose the best option.

“It can be a recording of the daughter’s voice saying, ‘Okay Mum, everyone is sleeping, you can go back to bed now,’” says Dr. Pigot. Some people prefer prompts with anonymous voices or music, she adds.

Dr. Bruce Wallace, a Carleton University adjunct professor who is executive director at AGE-WELL’s SAM3 innovation hub, has set up a system that includes bed sensors to follow a person’s night-time patterns. If wandering is detected, other technologies are activated—a night light turns on, a voice message is played—and finally the caregiver is alerted, if necessary.

“We want to guide the person with dementia back to bed if we can,” explains Dr. Wallace. “This gives the caregiver a sense of security by only waking them if the person with dementia attempts to leave the home.”
An emotionally supportive virtual assistant

A virtual assistant that can verbally prompt people living with Alzheimer’s disease to carry out daily tasks at home—such as handwashing—could vastly improve peoples’ independence and support their caregivers.

But imagine if the voice and instructions could take into account an individual’s personality and current state of mind. That’s what a new technology called ACT@Home is all about. Created by AGE-WELL investigator Dr. Jesse Hoey, a computer and cognitive scientist at the University of Waterloo, the emotionally responsive virtual assistant is designed to correspond with how a person with Alzheimer’s feels and is thinking.

“Emotion is what gives humans motivation and drives us to act...”

“One of the failure points in artificial intelligence technology is its inability to align with humans on an emotional level,” says Dr. Hoey. The new system overcomes this by combining artificial intelligence with social and psychological models—picking up clues like a person’s facial expression and posture—and then tailors its prompts accordingly.

“Emotion is what gives humans motivation and drives us to act,” explains Dr. Hoey, whose research on ACT@Home is also supported by the American Alzheimer’s Association. The disease brings problems with memory and reasoning for people, as well as personality swings and even shifts in power dynamics. He says it’s important to interpret how a virtual assistant’s prompts would “fit the person’s world model” and adapt accordingly.

For example, someone who identifies with a job held in the past as a high-powered executive might respond best to a voice and instructions customized to be more deferential, he suggests. This allows the older adult “to interact in a much more natural and intuitive way with the device.”

Related research supported by AGE-WELL called Emotional Motivation for Technology that Cares (EMOTEC), which he is carrying out with Dr. Julie Robillard, an AGE-WELL investigator and assistant professor of neurology at the University of British Columbia, is focused on developing computational maps that identify what sorts of interactions work best for individuals.

Their work is being conducted in collaboration with two long-term care facilities, Schlegel Villages and the Research Institute for Aging in Waterloo as well as Tapestry Retirement Living in Vancouver. It includes interviews with older adults with and without Alzheimer’s and their caregivers. The goal is to better understand the dynamics between them and their relationships with assistive technology.

Being able to align emotionally with users will overcome a major hurdle to the widespread deployment of virtual assistant technology, says Dr. Hoey. Once that can be worked out, ACT@Home could be ready for final design, production and sales in just a few years.

ACT@Home is designed to help people with Alzheimer’s disease complete activities of daily living.
Making life better for long-term care residents with dementia

Patricia Laurin says her 92-year-old mother Shirrill Crawford has been “totally lost” for several years due to Alzheimer’s disease. “She doesn’t know me. Her memory is really compromised.”

Yet the day ABBY—a wall-mounted personalized activity technology—was installed at Crawford’s Midland, Ont., long-term care home, she became “totally engaged for 90 minutes. It blew me away when she named my grandmother and my brother in pictures” displayed on the screen, says Laurin.

“My mother manipulated the board and got a meaningful response from it. It stirred a lot of memories and she was fascinated by the music and pictures. It was amazing to see her so engaged, relaxed and enjoying herself.”

The ABBY system integrates touch-screen monitors, video, music and familiar tactile activities such as turning a wheel or petting a cat to create engaging experiences for long-term care residents with dementia. What’s more, if the resident is wearing a Bluetooth beacon, it signals to the unit to pull up personalized content including family photographs, a resident’s favourite music or TV show.

ABBY, which uses a Montessori approach, was developed by industry partner Ambient Activity Technologies in collaboration with a Toronto-based research team and with support from AGE-WELL.

“We knew there was a problem with keeping people engaged in meaningful activities, so we wanted to physically activate people. You have to approach the ABBY unit, physically engage with it, and then in response you get this content that is meaningful,” says project co-lead Dr. Andrea Wilkinson, a postdoctoral research fellow at the University of Toronto and an AGE-WELL trainee.

Results are impressive. A 2017 study using ABBY at six long-term care homes showed a decrease in agitation, aggression, anxieties and paranoid delusions among residents living with dementia, along with improved quality of life. Staff experienced reduced burnout and for family members, outcomes included visitor satisfaction.

“There is still so much left in people with dementia. If we can help them access these long-term memories that still exist so they can have meaningful conversations with their loved ones, this can bring such joy to the individual and to the family members,” says Dr. Wilkinson.

Using content from their own lives draws the attention of residents to ABBY. “There is a genuine problem with triggering activity among people living with dementia. Familiar actions like petting a cat or turning a wheel use implicit knowledge that remains after a lifetime of use. Once the activity board reacts to their input, people become engaged and no further triggering is required,” explains Dr. Mark Chignell, who is project co-lead, a psychologist and a professor in the Department of Mechanical and Industrial Engineering at the University of Toronto.

“People are spending hours with ABBY. What I like about this project is the potential impact it could have for the almost 50 million people worldwide who live with dementia.”

In Canada, approximately 62 per cent of residents in long-term care homes have dementia and nearly half exhibit aggressive or agitated behaviour.

Boredom and lack of meaningful, engaging activities may be associated with increases in responsive behaviours, such as screaming and wandering. ABBY could prove to be an important part of a strategy to engage people living with dementia in long-term care.

Marc Kanik, managing director of Ambient Activity Technologies, is travelling the country to introduce ABBY to long-term care homes. Orders are coming in. About two dozen units already have been installed in Ontario homes.

“Everybody in our company feels good about working on something that has this kind of impact in bettering people’s lives,” says Kanik.

Dr. Andrea Wilkinson engaging with a resident and the ABBY ambient technology.
Clothing that fits the challenge

Older adults with back and neck problems can often benefit from posture braces, but these may be large and hinder their ability to do activities they love. Special apparel developed by entrepreneur Noureddin Chahrour, being marketed with the support of AGE-WELL, allows seniors to maintain their posture—and a comfortable, active lifestyle.

Chahrour, 26, an AGE-WELL trainee, invented the posture performance clothing while doing studies in kinesiology at the University of Toronto (U of T), where he experienced neck and shoulder issues from hunching over lab reports. He discovered that braces can be uncomfortable, bring only temporary relief and carry a social stigma.

Chahrour created a shirt fitted with adjustable Velcro straps that are pulled to straighten the posture. He founded Adrenalease Inc., a Toronto company that sees part of its market in sales to older consumers as well as caregivers.

“Seniors often have a stooped posture and conditions such as scoliosis that bring pain, balance issues and a greater risk of falls, while caregivers can hurt their backs and necks with constant lifting and bending,” explains Chahrour, the company’s president. Wearing the Adrenalease apparel encourages proper alignment and movement.

Chahrour hopes to scale up and expand his products, although he turned down a funding deal from CBC’s Dragons’ Den that would have required giving up too much equity in Adrenalease. He’s grateful to AGE-WELL for its backing and to U of T’s Impact Centre, an AGE-WELL core facility that provides office space, mentoring and introductions to potential investors.

AGE-WELL has helped Chahrour contact medical distributors and industry experts to tap into new markets, with patents pending in 40 countries. Adrenalease has relationships with retailers such as Pharmasave and Wellwise™ by Shoppers Drug Mart, and it is in talks with global distribution partners.

“AGE-WELL adds tremendous value with the connections they bring, the conferences they host, the industry collaboration and educational opportunities they provide,” says Chahrour.

Adrenalease is developing new products, like a sports bra that improves posture. It is also advancing its posture shirt to include “smart textiles” embedded with proprietary material that is integrated with sensors to straighten the posture with a touch of a button. This is an improvement over straps for seniors who have limited range of motion.
Stimulating apparel

Other wearable therapies AGE-WELL is supporting include clothing embedded with electrodes that deliver functional electrical stimulation to improve motor function of people with strokes or spinal cord injury, developed by Drs. Bastien Moineau and Milos Popovic at Toronto Rehab – UHN, in collaboration with Myant. The researchers are conducting focus groups with consumers and clinicians about product design and strategies to bring it to market.

“AGE-WELL inspired us to turn toward end-users to improve the design of our invention and make it as relevant as possible to them,” says Dr. Moineau.

Meanwhile the Hexoskin smart shirt—which collects biometric data as the wearer goes about daily life—continues to be studied for monitoring people with angina. The NOVASKIN study is being led by Dr. Marc Jolicoeur of the Montreal Heart Institute and is supported by AGE-WELL and MEDTEQ.

Pierre-Alexandre Fournier, CEO and co-founder of Carré Technologies Inc. in Montreal, which makes the shirt, says that near final results indicate that all participants who wore the Hexoskin smart shirt safely completed the cardiac rehabilitation programs, where 15 to 50 per cent of participants commonly drop out.

“With the technology and constant monitoring, patients feel a better connection with their care providers,” says Fournier. That could mean they’re more likely to comply with rehab regimens. ■
An app for arthritis management

A key challenge in arthritis treatment is tracking how people are doing between doctor and physiotherapist visits.

A new smartphone app developed by Vancouver-based technology startup eTreatMD and tested by AGE-WELL researchers at Simon Fraser University helps fill that gap by precisely measuring swelling and other physical changes using the device’s camera. People with arthritis can also learn how medications, diet and exercise affect their pain, and health-care providers can remotely assess progress.

“When you visit the doctor with pain, you’ll get assessed and sometimes asked to run a few tests, get a diagnosis and go home with painkillers,” explains Shanil Gunasekara, founder and chief executive of eTreatMD. “But outside of those interactions, you are often left to figure it out yourself.”

The LiveWith Arthritis Plus app’s information-gathering tools are designed to promote quicker and more effective changes in treatment, while reducing the need to go for X-rays and ultrasounds. For people living with arthritis, the app is an empowering tool that allows them to discover better ways to reduce pain, with the help of a familiar device.

“People are pretty motivated to learn to use the app if they know they are going to get to a better place,” says Gunasekara, who was inspired to develop the app after watching his grandmother and a company co-founder struggle with arthritis pain.

For the moment, the app’s picture-taking feature is restricted to hand and foot measurements. The company is looking at adding range-of-motion tracking for hip and knee surgery patients.

A team of AGE-WELL researchers led by Simon Fraser computer scientist Dr. Diane Gromala, who holds a Canada Research Chair in Computational Technologies for Transforming Pain, was instrumental in commercializing the app by conducting feasibility studies at a seniors’ home and two community centres in British Columbia. Their research, supported by the Arthritis Society, is assisting with a submission for U.S. Food and Drug Administration approval. The app secured a Health Canada Class-2 medical device licence in late 2017.

The work is demonstrating that people living with arthritis, even older ones, are eager to find new ways to relieve pain, points out Dr. Gromala, who also struggles with chronic pain. “They are really intrigued with the kinds of correlations they can find themselves,” she says.

Nearly 50 doctors and other health-care professionals are currently using versions of the app in Canada, India and Sri Lanka, or as part of clinical trials and research in the U.S. and Britain. The company is aiming to have 1,000 health providers using the app worldwide by the end of 2019, not to mention thousands of people living with arthritis.
A brain fitness app

Imagine if an app could help to maintain a healthy brain as well as slow, even reverse, the progress of cognitive decline in people with dementia. AGE-WELL investigator Dr. Zahra Moussavi, a professor and director of the Biomedical Engineering Program at the University of Manitoba, is working to make this happen.

Building on a pilot study which showed “very positive results,” Dr. Moussavi, holder of a Canada Research Chair in Biomedical Engineering, has developed a brain fitness app with industrial partner Tactica Interactive. The app is being tested in 2018 in a clinical trial funded by AGE-WELL.

“My goal is for aging individuals to avoid Alzheimer’s as much as possible and for those with dementia to avoid further decline and/or improve,” says Dr. Moussavi, who came to Canada from Iran to complete her master’s and doctorate before doing a postdoctoral fellowship at Johns Hopkins University. A well-known researcher in the diagnosis of respiratory disorders, she was inspired to conduct research on prevention and early detection of dementia after her mother was diagnosed with Alzheimer’s.

Dr. Moussavi and her team are developing a series of games or brain exercises for the iPad or tablets. They are designed to strengthen left-right side brain connectivity, and improve spatial memory (the ability to orient oneself in any new environment) and associative memory (the ability to learn and remember the relationship between unrelated items). The researchers are encouraged by results from their pilot study, which showed improvements in cognitive ability and memory among healthy older participants.

The clinical trial involves a group of healthy adults and some with early cognitive decline, who are age 65 and over and living independently. Half the participants will not use the app and will serve as the control group for comparative purposes. The other half will use the app for two 15-minute sessions daily for four consecutive weeks. Both groups will be tested before using the app, after using it for four weeks, and a month after they stop using the app.

The researchers are encouraged by results from their pilot study, which showed improvements in cognitive ability and memory...

As part of the trial, trained volunteers will also administer the brain app—developed with AGE-WELL support—to people with mild cognitive impairment or early-stage Alzheimer’s. Results will show whether the app has an effect on their cognitive status.

Dr. Moussavi hopes that the app will be commercialized for the use of older adults in Canada and internationally. The brain fitness app “means a lot to me,” she says as she reflects back on her mother’s experience with Alzheimer’s. “She was my motivation.”
Caregivers ‘Huddol’ for info and support

When her elderly mother needed to transition to a higher level of care, Donna Thomson reached out to Huddol members for advice on housing and care options in Montreal. After co-caregiving for his aging parents, Rick Lauber joined Huddol to share what he had learned with other caregivers.

Huddol is the country’s first cross-disease, cross-platform, bilingual collaborative network that aims to help family caregivers navigate the care journey by drawing on the real-life insights of caregivers, health-care experts and service providers. Members can join existing communities or create their own customized “huddols” for emotional support and to share knowledge.

A non-profit managed by the Canadian Caregiver Network, Huddol was soft-launched in the fall of 2017. Within months it had close to 10,000 members.

With support from AGE-WELL, work is underway to gradually introduce artificial intelligence (AI) or machine learning to Huddol, an AGE-WELL industry partner.

AI will take an already vibrant online platform to a new level and ensure that “the right information is delivered at the right time to the right people,” says Mark Stolow, CEO of Huddol, a Montreal-based company.

“Layering on artificial intelligence allows caregivers to describe what they need in plain language rather than using technological or medical terms,” says Dr. Janet Fast, AGE-WELL investigator and project lead, a professor at the University of Alberta and a well-known researcher in caregiving. “Huddol also has the capacity to be a one-stop shop that can be customized to your goals and needs, not just in your region but in your local community.”

Thomson has been a caregiver since her son was born with severe disabilities 30 years ago. Seven years ago, she and her sister became co-caregivers for their mother, who is now 96. An author of several books and a consultant on caregiving, Thomson is a big supporter of Huddol, a site she visits “multiple times daily. I’m a teacher sometimes and I’m a learner lots of times,” she says.

Lauber, who has written two books on caregivers, says: “I find contributing to Huddol is very important and rewarding to me as I know, first-hand, how challenging and daunting caregiving can be. Huddol means ‘community’ to me—a community which provides free support, direction, encouragement and understanding to prospective, new and current caregivers.”

Caregiving in Canada

- 8.1 million family members and friends—or one in four Canadians—provide caregiving services to loved ones and contribute $66.5 billion in unpaid labour to the health-care system.

- Age-related needs top the list of health conditions requiring care. Between 70 and 80 per cent of community care for older adults is provided by family caregivers.

- Caregivers have increased rates of mortality, mental health issues, poverty and social isolation. Those who are better informed experience lower anxiety, and have a more positive and supportive caregiving experience.

- Technology offers caregivers online solutions and social connections: 63% connect socially with other caregivers; 59% access emotional or mental health support; and 25% use technology like alarms, sensors or remote monitoring.

AGE-WELL hub brings policymakers together to discuss aging initiatives

It was a day of sharing knowledge and new approaches to support an aging population.

On February 23, 2018, the AGE-WELL National Innovation Hub on Advancing Policies and Practices in Technology and Aging (APPTA) brought together policymakers from nine provincial and territorial governments as well as federal representation from the Public Health Agency of Canada for a knowledge exchange event in Toronto.

The event was an exciting opportunity for representatives from across Canada to gather under one roof to discuss aging initiatives and get an inside look at the APPTA Hub. Discussion ranged from how APPTA can support governments in their aging-related initiatives to how research and innovation can play a significant role in policy development and implementation.

Conversation also focused on aging trends in Canada, the importance of home care to support aging-in-place and the adoption of technologies for health-care improvement.

A future meeting with policymakers is set for October 2018 at the AGE-WELL Annual Conference, being held in Vancouver.

“The February event was a great starting point to build relationships with government partners so as to best support and foster innovation and best practices for an aging population,” says Kevin Harter, executive director of the APPTA Hub. “We thank all of our government partners who were able to attend and participate in such an effective dialogue.”

APPTA is a joint initiative of AGE-WELL and the New Brunswick Health Research Foundation. The hub, based at York Care Centre in Fredericton, New Brunswick, was launched in May 2017 to bridge the gap between health-care policy needs and solutions. APPTA’s mission is to support governments in generating opportunities to address the policy and practice challenges of an aging population by providing space for knowledge exchange.

APPTA brings together innovators and entrepreneurs with end-users and service providers to help transform their ideas into market successes. The hub also provides training opportunities for graduate students and postdoctoral fellows, and gives stakeholders access to the latest research on emerging tools and health technologies that can support independent living and improve quality of life for older adults and caregivers.
Alert system aims to keep people with dementia safe

Ron Beleno knows the “panic, frustration and helplessness” family members experience when a loved one with Alzheimer’s disease or a related dementia wanders from home and becomes lost. It happened numerous times with his father, who had Alzheimer’s for the last 10 years of his life.

“I realized after hearing more stories about missing individuals that there are opportunities to improve the chances of a successful find by coming up with better solutions,” says Beleno, a caregiver who collaborates on a number of AGE-WELL research projects.

His idea is to directly engage community volunteers from the immediate area through an alert system so they can keep an eye out for the missing person. This solution—called Community ASAP—is “innovative and something we have not seen in North America,” says Dr. Lili Liu of the University of Alberta, who is leading the AGE-WELL study team on the project.

The need is real: 60 per cent of people with dementia will wander, according to the Alzheimer Society of Ontario. The number of people living with dementia in Canada is expected to reach 937,000 by 2031, a 66 per cent increase from current numbers.

People with dementia usually wander on foot and are found within 12 kilometres of home.

Dr. Liu, Beleno and others from AGE-WELL have partnered with the Centre for Aging and Brain Health Innovation, police, community organizations and community members in Calgary, Ontario and British Columbia to test the Community ASAP alert system.

Beleno is establishing a startup company and plans to launch the system in several communities as early as 2019.

Volunteers in a community can identify specific areas they frequent, including their home and work neighbourhoods. If a person with dementia wanders in this area, the volunteer will receive an alert via an app on their phone or device giving them the name and description of the missing person.

By only sending alerts to volunteers within the area where the person went missing, this helps to avoid “alert fatigue,” one of a number of problems identified in studies of state-wide Silver Alert programs in the U.S.

“When we looked at the evidence, we found that all but five states have publicly funded
Silver Alert programs and that, generally speaking, this system is not cost effective,” says Dr. Liu.

“Currently, there are other solutions that first responders use but they are not ideal—they are bulky and very expensive. I see Community ASAP as an accessible, affordable solution for keeping older adults living in their communities even when they are at risk for getting lost.”

Dr. Liu and her team worked closely with Alberta MLA Mark Smith to provide the latest research from Canada and beyond in order for the provincial government to make an evidence-based decision. The result was Bill 210: Missing Persons [Silver Alert] Amendment Act, which is now in force.

The new legislation allows any police service in Alberta to send a “Silver Alert” using a broadcasting messaging system that disseminates information to the public through local media and other means as soon as practicable after a person goes missing. Manitoba was the first province to implement a Silver Alert amendment to its missing persons legislation. Vancouver has a citizen-funded Silver Alert program.

The volunteer-based Community ASAP service and app being developed by Dr. Liu’s team will put the Alberta legislation into action in Calgary and the surrounding area. The ultimate vision is a Canada-wide service.

The Community ASAP project is timely as the federal government works toward finalizing a national dementia strategy, while also having a call and petition from Canadians asking for a National Silver Alert Strategy. ■

Report finds variation in access to assistive technology

A report led by AGE-WELL investigators Dr. Rosalie Wang and Dr. Michael Wilson shows that access to assistive technology (AT) varies across Canada.

The cross-Canada survey describes disparities in access to funding and services between jurisdictions and population groups. It is the first comprehensive jurisdictional scan of assistive technology programs that are offered by government as well as charities across Canada.

Assistive technology can help older adults and those living with a disability to engage in important daily activities. Whether it is for mobility, employment or communication, 81 per cent of Canadians living with a disability report using some form of AT.

Key findings from the report show that:
- Provinces and territories have highly variable legislation for AT devices and services;
- Canada does not have federal legislation that requires universal access to AT devices and services; and
- Charities play numerous roles from collaborating with governments to providing funding, devices and services, to operating loan programs for selected devices.

The cross-Canada scan is being consulted by policymakers as they review and renew processes for access to AT.

A working group led by Alberta Health Services in partnership with a program of the provincial Ministry of Health is putting the AT scan to use. The working group is tasked with identifying service gaps related to how Albertans access assistive technology. The AGE-WELL report saved members a significant amount of time and effort as they looked at aspects of AT access in other jurisdictions.

The group will make recommendations to reduce any service gaps identified and improve service provision across the province.

The University of Toronto, McMaster University, McMaster Health Forum and March of Dimes Canada partnered with AGE-WELL to create the cross-country AT scan. The report is part of a larger AGE-WELL project that is championing change to enhance fair access to AT for Canadians. ■
Traditionally, older adults are asked for their opinions about a new product when it is near completion. AGE-WELL takes a different approach.

“We’re committed to involving older adults and caregivers from the early stages of development right through product testing and marketing,” says Dr. Alex Mihailidis, scientific director of AGE-WELL. “It’s the best way to ensure that our products respond to people’s needs and are actually used.”

**Impressively, more than 4,000 older adults are now contributing to AGE-WELL projects...**

By actively engaging consumers, “it becomes less of a technology-oriented project and more of a project that improves the lives of older people, and happens to involve technology,” says Dr. Judith Sixsmith, an AGE-WELL investigator and the Professor of Health Related Research at the University of Dundee, Scotland.

Dr. Sixsmith is co-lead, along with Dalhousie University professor Dr. Susan Kirkland, of an AGE-WELL project called OA-INVOLVE (www.oa-involve-agemwell.ca). The team has produced practical guides and other resources to help researchers across AGE-WELL—and outside the network—to successfully involve end-users in their research.

Impressively, more than 4,000 older adults are now contributing to AGE-WELL projects, according to a 2017 survey done by OA-INVOLVE. The majority are participants in research, while others take part in advisory and decision-making roles.

Dr. Arlene Astell and Dr. Deborah Fels are also big believers in older adults being the experts on their own lives. “For us, the technology development is always to empower the individual," says Dr. Astell, an AGE-WELL investigator and Research Chair in Community Management of Dementia at the Ontario Shores Centre for Mental Health Sciences.

Dr. Astell and Dr. Fels, director of the Inclusive Media and Design Centre at Ryerson University, co-lead another AGE-WELL project to develop tools to involve older adults in technology development. Their new TUNGSTEN website (www.tungsten-training.com) offers a wealth of free resources including a hands-on guide for creating better technology for older people through interactive workshops. The materials are for anyone looking to innovate with seniors.

The workshops are designed to bring together industry, researchers, service providers and older adults “on a level playing field.” "We really involve older people," says Dr. Astell, “so we can understand what is important to them in terms of their decision-making and adoption of technology."

The project team also has developed a tool called NICKEL that assists AGE-WELL researchers and trainees with methods to draw out, assess and understand user needs depending on their perceptual, cognitive and motor abilities.

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**Other ways AGE-WELL involves older adults and caregivers:**

Thanks to a unique program, 26 older adults and caregivers now assess the relevancy of applications for AGE-WELL research funding.

**AGE-WELL’s Research Management Committee includes an individual who is living with Alzheimer’s disease.**

**AGE-WELL has an Older Adult and Caregiver Advisory Committee, which directly advises the network’s scientific directors.**
Ian Goldman has a message for older adults and caregivers interested in getting involved with an AGE-WELL research project: “Jump in!”

That’s what Goldman did in 2016 when he heard about an AGE-WELL project looking for older adults to participate as research partners advising on all aspects of the research process.

“It piqued my curiosity from the outset and I thought I could give the project some lived experience,” says Goldman, a former IT business analyst who volunteers as a teacher of older adults and “distance manages” care for his mother in the U.K.

Goldman is part of a group of older adults advising on the AGE-WELL project called OA-INVOLVE. It’s co-led by Drs. Susan Kirkland (Dalhousie University) and Judith Sixsmith (University of Dundee). They are joined by co-investigators Drs. Pia Kontos (Toronto Rehab – UHN) and Kieran O’Doherty (University of Guelph).

OA-INVOLVE aims to develop best practices to support the active involvement of older adults in AGE-WELL projects. The work focuses on understanding how to best incorporate the experience and insight of older adults in aging and technology research.

“It is a meaningful project. We provide life experience and help in some decisions about the way the project is going. All of us have stepped forward because we want to contribute to older adults’ lives and we want to see outcomes,” says Goldman, a Toronto resident.

The group—which also includes older adults in Halifax, Vancouver and Guelph—provides advice through national video conferences and local sessions. Last October, members had a chance to meet in person at AGE-WELL’s Annual Conference in Winnipeg.

Whether reviewing interim findings or developing selection criteria for older people involved in case studies, the group plays an active part in shaping the research agenda.

“It has been rewarding. It has kept my grey cells firing,” says Goldman, who describes the experience as an opportunity to “give back.” Goldman worked for 30 years on IT projects, including 10 for Sanofi Pasteur (previously Connaught Vaccine Development Labs). He has a strong interest in technology and aging, and believes advanced technologies in areas such as artificial intelligence can improve quality of life for older people and their caregivers.

A founding member and co-chair of the Senior’s Advisory Panel to the Centre for Aging and Brain Health Innovation (CABHI), Goldman volunteers in various seniors’ centres showing clients how to use software and social media to stay connected with family, friends and interests. He has also acted as a co-facilitator for the Minds in Motion program of the Alzheimer Society of Toronto.

“I’m fond of technology. I’m not a geek, but I love to see something that’s new and get a taste of it, and see whether it’s going to be useful to someone.”

It’s one of the reasons Goldman joined a second AGE-WELL project, called CARE-RATE. The research team is developing a one-stop online platform where people can find assistive technologies, services, resources and other information that will support them as caregivers of people with dementia.

What makes the platform unique is the use of a new type of artificial intelligence called cognitive computing, a much more powerful and specific tool than a typical search engine.

Says Goldman: “It didn’t take any persuading for me to get involved.”

CARE-RATE is co-led by Drs. Jen Boger (University of Waterloo) and Frank Rudzicz (Toronto Rehab – UHN/U of T/Vector Institute).
Knowledge Mobilization & Commercialization

AGE-WELL works hard to achieve impact through commercialization and knowledge mobilization.

Nurturing startups is an important part of this. AGE-WELL now proudly supports 12 startups that are commercializing and launching products, and generating wealth. Collectively these companies have created more than 70 jobs in the technology and aging sector. They are winning competitions and leveraging hundreds of thousands of dollars in additional funding.

More generally, AGE-WELL encourages all our researchers, who now number in the hundreds, to focus on real-world products and outcomes. Last year, we held innovation workshops across Canada. The focus was on assisting researchers to integrate commercialization and knowledge mobilization into their projects.

We help ideas achieve liftoff in other ways. In 2017, our National Ideathon Competition, co-hosted with HACKING HEALTH, attracted more than 300 participants at events in Toronto, Montreal, Halifax and Vancouver. The aim was to identify and invest in new technologies and services to support healthy aging. We achieved our goal. The winner was Steadiwear, which is developing a "smart" glove to decrease hand tremors (see page 31). The runner-up was MyMem, creators of a technology that will help older people with memory loss to recall information using artificial intelligence (see page 32). Competitions like this one are an important way to identify new investments and startups for our network.

Building on the success of our ideathon, we launched the AGE-WELL National Impact Challenge in May 2018. Canadians were invited to submit by video their innovative ideas for technology-based solutions that can benefit older adults and caregivers. Finalists are competing for over $100,000 in prizes at the AGE-WELL Annual Conference in Vancouver in October 2018. We are excited to see which ideas win the day—and to support them as they make their way in the world.

The challenge is sponsored by Bereskin & Parr, CARP, the Impact Centre, Revera, Sun Life Financial, and TELUS Ventures.
**AGE-WELL is a rich repository of knowledge and expertise in the technology and aging field.** This past year, we intensified the sharing of that knowledge with all levels of government. For example, we worked closely with Senator Art Eggleton to convene our first Day on the Hill on May 2, 2018 in Ottawa, and met with dozens of MPs, senators and ministerial staff over two days.

We also made three policy submissions to government, including the Standing Senate Committee on Social Affairs, Science and Technology. AGE-WELL was an enthusiastic participant in the National Dementia Conference, hosted by the Government of Canada to help inform a national dementia strategy. Of course, we have a new Fredericton-based innovation hub, Advancing Policies and Practices in Technology and Aging (APPTA), which helps AGE-WELL contribute to policy innovation. Earlier this year, APPTA brought together policymakers from across Canada to share new approaches for supporting seniors. Another such meeting is planned for October.

Our annual conference is a major opportunity for networking and knowledge exchange. The 3rd AGE-WELL Annual Conference attracted over 300 attendees from a wide range of backgrounds (see page 36 for more on AGE-WELL 2017).

We contribute in a number of ways to public awareness and discourse around age-related issues. Last year, AGE-WELL launched a public webinar series. Network members also appear widely in the media. AGE-WELL has truly become a go-to authority.

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**Sharing knowledge with decision-makers**

*Top: Senator Art Eggleton was the sponsor of AGE-WELL's Day on the Hill.*

*Middle: Dr. Pooja Viswanathan discusses her wheelchair system with Jean Saint-Vil (left), associate vice president, Networks of Centres of Excellence.*

*Bottom: Dr. Andrea Wilkinson describes the ABBY ambient technology to Senator Robert Black.*
FAMILI.NET COMMUNICATIONS INC.

Connecting the unconnected in an online world

An AGE-WELL-supported startup is launching its innovation globally.

Famli.net Communications Inc. is introducing its multi-platform version of Connections in Singapore through multiple organizations that provide community care to seniors. Connections is a communications platform that helps prevent loneliness and isolation by keeping older adults in contact with family and friends.

One billion people worldwide, especially seniors, do not have online access to their social contacts, or to commercial and government services in what is fast becoming a self-service economy.

“Connections is designed to break down these walls and re-engage people who have vision, hearing, motor skills, cognition or language barriers that isolate them from the people and services they need,” says Dr. Robert Arn, president of Famli.net.

To introduce Connections to older people in Singapore, volunteers with the social service organizations will bring cell phones that include the new platform when they make their weekly visits to seniors. An artificial intelligence system can record a spoken message from the senior, transcribe it into text, and deliver it to a relative or friend’s email inbox or as a text. The system can translate the message into other languages if required.

The multi-platform version of Connections works on any device that can run a web browser. It also includes the capabilities of the earlier version for iPad that makes it easy for seniors to send voice, text or video messages and photographs.

In addition to social benefits, Famli.net and Connections are creating economic benefits by way of new jobs at the startup, early sales and investment from within Canada and Singapore.

Connections was developed by TAGlab at the University of Toronto with support from AGE-WELL.

“Having a highly credible Canadian research organization like AGE-WELL connected to us is key to our credibility in a place like Singapore,” says Dr. Arn.

Sunnybrook Veterans Centre and a Revera retirement residence in Toronto became Famli.net’s first customers.

“Connections is excellent for seniors who have never experienced computers before. It helps with loneliness,” says Jai Martin, 83, a Revera resident and Connections user. “People use it to communicate with family and friends as well as residents here.”

When she was sick with the flu for four weeks, “residents sent me encouraging voice and text messages, and pictures of bouquets. I was lying in bed with my tablet communicating with people using Connections.”

When her husband, who was not a Connections user, was hospitalized in a room without a television or phone, Martin borrowed an iPad with Connections from Revera and delivered it to him. “He could get in touch with me or any of our children so that he didn’t feel so helpless. When he said he missed his cat, Whiskers, I took several pictures and sent them to him.”

Famli.net has deep roots at AGE-WELL. It is funded through the network’s Core Research Program. Project co-leads are Drs. Ron Baecker (University of Toronto) and Sandra Black (Sunnybrook Health Sciences Centre).
Mark Elias and Emile Maamary are achieving their dream: to commercialize a “smart” glove that can make life better for people who live with hand tremors.

The pair has perfected a prototype and clinical testing is progressing well.

Steadi-One is a lightweight, compact and battery-free stabilizing glove. It uses a “smart” fluid designed to provide resistance to hand tremors from Parkinson’s disease and Essential Tremor.

“I’ve seen my grandmother struggle with hand tremor. It’s a condition that can make it difficult to eat, drink and write,” says Elias, CEO and co-founder, with Maamary, of Steadiwear Inc., an AGE-WELL-supported startup.

The glove, which is patent pending, has done well in beta tests. Incubated at the Impact Centre at the University of Toronto, Steadiwear is coming off a spectacular year. The startup captured prizes at three competitions, including the AGE-WELL-HACKING HEALTH National Ideathon Competition. Steadiwear, which also receives support from the Ontario Brain Institute, aims to bring the glove to market by the end of 2018.
Aishwarya Ravichandran has watched her grandmother struggle with dementia for years, frustrated at the lack of simple tools to help the 73-year-old recall important information as her memory falters.

Ravichandran, a postgraduate student in applied computer science, got her chance to do something about the problem last year when she teamed up with three fellow Dalhousie University students to create a voice-activated smart phone app at a one-day health technology “hackathon” competition in Halifax.

Her team took first place and turned the app into MyMem—a company and a product, now in development. The app works like Apple’s Siri and Google’s Alexa, allowing people with memory loss, as well as their families and caregivers, to access a digital version of their life story using voice commands. The cloud-based system can store pictures, music, vital personal information such as addresses, phone numbers and prescriptions, as well as likes and dislikes—all protected by strict permissions and privacy options.

“I have seen all the struggles that my grandmother goes through,” says Ravichandran, 26, now chief executive of the Halifax-based startup. “That’s why I really wanted to get this problem solved and bring it to the market.”

The app is designed for people with early-stage dementia and their caregivers. It incorporates personalized cues to help people living with dementia keep track of their daily needs and activities.

“The app keeps learning from the different inputs and gives the most relevant response to the end-user,” Ravichandran explains.

The company is working to refine its prototype. The app will soon be tested with people who have dementia and their caregivers—with the help of AGE-WELL. MyMem won a $25,000 cash and in-kind services prize at the AGE-WELL-HACKING HEALTH National Ideathon Competition in 2017. The company is working towards a commercial launch in late 2019 as it continues to refine the app with the help of users, caregivers and health professionals, Ravichandran says.

“I know it can be developed. It is feasible,” she explains. “We want to make sure it’s a product that people will actually use.”
BRAZE MOBILITY INC.

An obstacle-avoidance system for wheelchairs

For Braze Mobility Inc., it’s been a year of dizzying success since the launch in Fall 2017 of its first product—an add-on system that can transform a regular wheelchair into a “smart” wheelchair able to help prevent collisions.

New partnerships, competition awards, selling out of its first production run and plans to expand to global markets are just a few of the many indicators that the AGE-WELL-supported startup is gaining traction in the marketplace.

“We’ve had great feedback on our first product run,” says Dr. Pooja Viswanathan, CEO of Braze Mobility and a postdoctoral fellow at the University of Toronto (U of T). “That has been a result of us listening very closely throughout the process, making tweaks and keeping the user experience as our central focus.”

The novel anti-collision system uses sensors to detect obstacles and provides visual, audio or vibration feedback to drivers. It can be added to any powered or manual wheelchair.

“Rear visibility and manoeuvring in tight spaces are real issues with mobility devices—and collisions can result,” says Dr. Viswanathan, an AGE-WELL trainee. “Our obstacle-detection system is designed to increase safety, independence and quality of life for people living with mobility impairment.”

Wade Watts, a powered-wheelchair user, says the new system “gives you a piece of your dignity back and makes you feel more secure in your surroundings. To have a device that is literally watching my back is an amazing feeling.” Watts owns a company that now distributes the system.

Several versions of the product can be ordered in North America at www.brazemobility.com.

Among early adopters of the product are veterans through a distribution partnership with a U.S. Department of Veterans Affairs preferred vendor.

A core team of three full-time Braze staff is assisted by contractors. Several interns have been hired through the support of BioTalent Canada and the Natural Sciences and Engineering Research Council of Canada (NSERC). Braze is incubated at U of T’s Impact Centre.

Graham Browning, a graduate of Ontario’s University of Waterloo, serves as product manager. He took the position at Braze over other offers. “A big motivating factor was wanting to make a positive impact in other people’s lives,” he says.

Braze has been funded through many AGE-WELL programs and officially launched its new product at the AGE-WELL Annual Conference in 2017.

Incorporated in 2016, Braze has also received support from the Ontario Brain Institute through its ONtrepreneurs program, the Ontario Centres of Excellence, the National Research Council of Canada Industrial Research Assistance Program, the Impact Centre and Semaphore Research Cluster at U of T, and OBIO through its Capital Access Advisory Program.

In recent months, the startup has earned recognition and funding—totalling $347,000 in grants, and in cash prizes at a host of pitch competitions.
It’s not every day that ground-breaking academic research heads so swiftly out of the lab and into the real world. That’s the story of a speech-analyzer technology developed by WinterLight Labs Inc. that detects cognitive impairment in its early stages, leading to quicker and more accurate diagnosis of Alzheimer’s disease and other conditions.

“Our work is exciting from a medical standpoint in terms of helping people, but it’s also fulfilling to know we’re solving a complex technical challenge,” says Liam Kaufman, CEO and co-founder of the Toronto-based startup.

Two years after winning an AGE-WELL pitch competition, WinterLight is taking major steps towards commercializing its technology. In 2017, the company closed a second round of seed funding from an American venture capital firm in the amount of $1 million (U.S.). It also signed deals with three leading pharmaceutical companies, including Johnson & Johnson, who are now evaluating the platform as a tool to accurately detect Alzheimer’s disease and monitor patient response to new therapies in clinical trials.

As Kaufman explains, the speech analyzer fills an important gap in the market by quickly and reliably identifying cognitive impairment without the need to rely on subjective and time-consuming pencil-and-paper tests. “There have been many failed clinical trials for Alzheimer’s therapies,” he says. “Our technology provides a more objective measure, which can lead to better trial outcomes.”

Designed for the Apple iPad, WinterLight’s speech analyzer records a person as they describe a picture and sends the recordings to a state-of-the-art cloud platform for analysis. The technology immediately extracts hundreds of variables, such as pitch, tone and choice of words, and examines linguistic cues that point to early cognitive decline, ultimately gauging the level of impairment.

Moving forward, WinterLight will work with its pharmaceutical partners to ensure its speech analyzer is ready for production as a medical device, with the goal of starting the regulatory approval process by 2020. The AGE-WELL-supported startup is also assessing its tool for use in senior care settings in partnership with Revera.

To meet its increased workload, the company recently doubled in size to 11 full-time people, led by Kaufman and chief technology officer and co-founder Maria Yancheva. Co-founder Dr. Frank Rudzicz, an AGE-WELL investigator and scientist at Toronto Rehab – UHN, maintains a part-time role as president. WinterLight also receives support from the Ontario Brain Institute and Ontario Centres of Excellence.

Recently, the company’s success reached the world stage when Kaufman was invited to present at the 2018 BIO International Convention in Boston. “It’s extremely rewarding to be recognized,” he says, acknowledging the importance of early funding. “AGE-WELL gave us a leg up so we could focus on the science. We wouldn’t have reached this stage without it.”

Elizabeth Audette-Bourdeau was inspired by her grandfather to create an easy-to-use software to help older adults stay active and connected in retirement homes. “He was less social and engaged at his retirement residence,” recalls Audette-Bourdeau, who developed the software for both seniors and caregivers, and co-founded Welbi, an Ottawa startup.

Welbi’s software uses artificial intelligence to recommend events and activities for residents. It can suggest new friends, using a special “matchmaking” software. A simple chat interface helps residents stay in touch with family and friends. Through a separate mobile app, family members can get updates on their loved one’s activities, be alerted to changes in habits and communicate directly with staff.

Founded in 2016, Welbi now has seven employees. A go-to-market strategy developed with assistance from AGE-WELL investigator Dr. Jeffrey Jutai, a University of Ottawa professor, is helping the company licence its software, which runs on multiple platforms. Welbi’s CEO Audette-Bourdeau, an AGE-WELL trainee, was recognized with the Founder of the Year award at the 2018 Ottawa Bootstrap Awards.
AGE-WELL 2017
Conference focuses on benefits to Canada

AGE-WELL's 3rd Annual Conference drew more than 300 researchers, trainees, older adults, caregivers and partners from industry, government and the community. Scientific talks, demos, a product launch and the grand finale of a National Ideathon Competition were just some of the highlights. Held in Winnipeg in October 2017, the conference theme was Benefitting Canada: Technologies, Services and Policies for Healthy Aging. Researchers reported on advances in a wide array of initiatives, such as the testing of special flooring to reduce injuries from falls, development of social robots and use of inter-generational digital storytelling in a First Nations community in northern British Columbia.

AGE-WELL 2017 showcased a multidisciplinary program of research and innovation from across the AGE-WELL network.

There were dozens of demos on display, including home sensors, wearable devices, interactive systems and apps for older people.

Michael Tamblyn, CEO at Rakuten Kobo, kicked off the conference with a riveting speech on how reading and aging have become more and more central to Kobo’s work. “It’s a potent mix of doing what’s right, doing good business, and learning about how changing demographics will continue to influence and impact technology in the years to come.”
Best Demo Award went to Dr. Victor Fernandez (centre), a postdoctoral fellow at the University of Alberta, for a computer-guided “virtual gym” that delivers personalized exercise instruction and feedback to promote physical and cognitive health among older adults.

AG-EWELL 2017 featured the grand finale of the AG-EWELL-HACKING HEALTH National Ideathon Competition, with finalists competing for prizes totalling $75,000 in cash and in-kind services.

The ideathon was sponsored by: Bereskin & Parr and the Impact Centre at the University of Toronto. Local sponsors included: Aging 2.0 Local I Toronto; the Canadian Consortium on Neurodegeneration in Aging; Desjardins; MaRS; MedStack; and MEDTEQ.

There was also a product launch at AG-EWELL 2017. Braze Mobility Inc., an AG-EWELL-supported startup, unveiled an add-on system that can transform a regular wheelchair into a “smart” wheelchair able to help prevent collisions.

Generous sponsors of AG-EWELL 2017 were: Bereskin & Parr LLP, Canadian Association on Gerontology, Fasken Martineau LLP, Gilbrea Centre for Studies in Aging, Impact Centre, Ontario Brain Institute, MEDTEQ, Revera, Rakuten Kobo, VHA Home HealthCare, and Wellwise™ by Shoppers Drug Mart.

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Innovation is mainly about people and that is why AGE-WELL is preparing the next generation of innovators. Our unique training program called EPIC (Early Professionals, Inspired Careers) now boasts almost 500 highly qualified personnel (HQP), including alumni, from 66 institutions across nine Canadian provinces, Australia, Denmark, the United Kingdom, France and the United States.

The EPIC program trains bright young researchers and professionals in applied environments, equipping them with the skills they need to become future leaders in the field of technology and aging. We have awarded 175 trainees with Innovators of Tomorrow certificates which demonstrate their transferable skills and comprehensive knowledge in technology and aging.

Our HQP report that being involved with AGE-WELL has opened the door to unparalleled opportunities. As you will read, our trainees are landing jobs in industry, community organizations and academia. Some are taking the lead in startups aimed at commercializing outcomes of AGE-WELL research.

There are many examples of AGE-WELL HQP who are moving their ideas forward in imaginative ways. For example, Team MouvAble, a group of trainees who came together at AGE-WELL’s Summer Institute last year, went on to secure $50,000 from the Centre for Aging and Brain Health Innovation to test the usability of their project aimed at preventing physical and cognitive decline in long-term care residents.

Skills for successful careers

The EPIC program exposes HQP to multidisciplinary research environments, industry and community partners. It offers experiential learning opportunities and emphasizes the development of skills, ideas, teamwork and relationship-building that are the foundation of a successful career.

We are adding educational opportunities all the time and, in April 2018, launched an exciting new training award named after our founding Board chair. The Michael F. Harcourt Fellowship in Public Policy is designed to encourage fellows from any discipline to consider the policy dimensions of their work.

The EPIC program has outstripped all expectations. AGE-WELL is tremendously proud of this talented and diverse group of individuals whose futures are so promising.
Danette Starblanket's goal is to improve the quality of life for Canada's Indigenous People—and she believes her involvement with AGE-WELL will help her to succeed.

“I think that what I've learned and the people I've met through this training will really impact my future and my career,” says Starblanket, an AGE-WELL research assistant and trainee. “It's exciting when I find something new that we can utilize in our Indigenous communities because that's always been my passion and my focus.”

Starblanket is a citizen of the Star Blanket Cree Nation, a PhD student at the Johnson Shoyama Graduate School of Public Policy (University of Saskatchewan and University of Regina), and a sessional instructor in Indigenous Studies at the First Nations University of Canada. She was selected to attend AGE-WELL's 2018 Summer Institute.

Starblanket accepted an invitation from Dr. Carrie Bourassa, AGE-WELL investigator and scientific director, Canadian Institutes of Health Research, Institute of Aboriginal Peoples' Health, to help with a research project to foster innovation in the technology and aging sector, especially in relation to policy changes for Indigenous communities.

The AGE-WELL study focuses on technology user needs of Indigenous older adults in rural and remote communities who require dementia care. Dementia rates are reported to be about one-third higher than the non-Indigenous population and rising more quickly.

Starblanket is working closely with the Community Research Advisory Committee of the File Hills Qu'Appelle Tribal Council in Saskatchewan to gather information about the comfort level with technology and the technology needs of older Indigenous people with dementia, and their families, friends and health professionals who provide care for them.

Dr. Rita Orji says her experience as an AGE-WELL trainee while doing postdoctoral work at McGill University helped her to see the sheer scope of what could be accomplished in the field of technology and aging.

These days, Dr. Orji is an assistant professor of computer science at Dalhousie University, where she is in her first year and planting the seeds for future research projects that promote behavioural change in older adults.

It's a direct application of the knowledge gained from her work with AGE-WELL in 2015 on a project focused on digital storytelling as a way for older people to remain connected with others. “As people age, their social networks shrink and they may become isolated,” she explains. “So, we worked on designing a digital pen and paper communication tool that older adults could write with, then digitally send to their friends, children and grandchildren.”

Dr. Orji, who did her PhD at the University of Saskatchewan, got launched in the technology and aging field because she was interested in designing for underserved populations. Technology tends to be made for the young and dexterous, she says, for people who have grown up with cell phones, tablets and computers.

“I asked, ‘how could we design technology that can be popularized and really useful for people who are usually not considered in technologies design process?’” she says. “Older adults are part of the underserved population and they have many needs that could be served by technology including the need to communicate and connect through storytelling. They need to tell stories about their lives. They need to be heard.”

Was that her mantra when she was with AGE-WELL?

“It was,” she says. “And it still is.”
When he graduated as a kinesiologist,
Dr. Mohamed-Amine Choukou imagined his future as a researcher working to improve quality of life and increase the mobility and social participation of seniors.

Then, while doing postdoctoral research at Laval University in Quebec City in 2013, he landed an AGE-WELL trainee position to pursue work on a suspension walking assist system as a clinical tool for training powered wheelchair driving skills.

“AGE-WELL made me look more broadly at the community, at all areas of life where you can apply your expertise, beyond just academia,” he says. “I met practitioners from the care settings and industrial sectors.”

The wheelchair project led to his hiring in mid-2017 as director of research and development at Centre collégial de transfert de technologie en orthèses, prothèses et équipements médicaux, or TopMed, a Quebec government technology transfer agency involved in prosthesis, orthosis and medical devices.

What impressed Dr. Choukou, 34, about the diverse professionals he met through the AGE-WELL network was their common focus on solving problems and getting solutions quickly into the community. “It’s about speaking a language that is understood by every actor in the field,” explains Dr. Choukou, whose interest in rehab began with a knee injury in his mid-20s.

As much as 70 per cent of his current work involves developing tools for older people, including a non-motorized treadmill, a patient lifting system for baths and a suspension walking assist system for people with multiple sclerosis.

“What’s really exciting is developing products that have a real impact in the very short-term,” Dr. Choukou says. “You develop a prototype, and in a few months there may be contracts for selling it and benefits for end-users and their relatives.”

Only two years after graduating from AGE-WELL's EPIC training program, Lupin Battersby is making good progress toward achieving her five-year career goal: a management role at a research centre or network, where she oversees and supports projects through knowledge mobilization and commercialization.

“I'm actually on my way,” says the knowledge translation specialist with the BC SUPPORT Unit, Fraser Centre. The BC SUPPORT Unit is a multi-partner organization created to support, streamline and increase patient-oriented research throughout British Columbia. It is part of the national Strategy for Patient-Oriented Research.

As a knowledge translation specialist, Battersby’s role is “to help researchers and all stakeholders to implement, disseminate and synthesize research into practice, policy or programming.”

It’s all about having a positive impact on the lives and health of Canadians.

Historically, it has taken about 17 years for research evidence to be implemented into practice, says Battersby. “However, others have found that if you really take an intentional approach to your knowledge translation and dissemination, then you can reduce that by about half.”

Battersby, a PhD candidate, credits AGE-WELL with helping to round out her skill set, provide dynamic transdisciplinary research team experiences and expand her network of research collaborators. She is grateful for the support she received from AGE-WELL to obtain a Graduate Certificate in Science and Technology Commercialization at the Beedie School of Business at Simon Fraser University.

“My PhD is focused on knowledge translation but I hadn’t done any work on the commercialization piece,” she says. “Now I can speak to both pieces of the knowledge mobilization puzzle.”
As an AGE-WELL trainee, Howard Chiam created computer games geared to stroke survivors—work, he says, that was key to getting his dream job at ATS Automation in his hometown of Cambridge, Ontario.

The games he designed with AGE-WELL were part of a new robotic device to help rebuild upper-body strength and motor skills in stroke survivors. The games helped to keep people motivated as they exercised by pushing on a robotic arm.

“With AGE-WELL, I wanted to work on making technology more user-friendly for an aging population and for anybody else who might have problems understanding it,” he says. “Ever since high school, I’ve worked on projects that are useful and can be applied in a number of different ways.”

Chiam says his training with AGE-WELL, while doing a master’s in clinical engineering at the University of Toronto, showed him how important it is to find meaning in the work he does. All too often, for example, stroke survivors simply stop doing their rehabilitation exercises out of frustration. The computer games, which ranged in difficulty from playing with simple shapes to fueling a spaceship while aliens are trying to steal it, were intended to motivate people anew.

At ATS, Chiam continues to make web interfaces for medical products more intuitive, only on a much larger scale. ATS, which is headquartered in Cambridge, provides automation solutions to many of the world’s most successful companies.

Recently, Chiam has been on a major learning curve after joining a team for a new project. Although he can’t talk about it due to a non-disclosure agreement, he can say with certainty: “It’s all about the work making a difference.”
Surrounded by natural beauty, Banff, Alberta was a perfect setting for the 3rd AGE-WELL Summer Institute, which was all about Co-Creating Possibilities: Leisure, Recreation and Wellness—Opportunities for Engaging the Older Adult.

Seventeen AGE-WELL trainees from across Canada took part in the immersive week-long training program. They worked closely with mentors to define a problem and develop a solution to improve quality of life and bring social and economic benefits—with a focus on leisure and recreation.

Engaging with older adults and caregivers was a crucial part of all the activities, from identifying and validating solutions to addressing project elements such as prototyping, marketing and commercialization. The week ended with a lively pitch competition.

“To go from ideation to a pitch in five days is always a huge challenge,” says Dr. Richard McAloney, director of entrepreneurship at the Impact Centre at the University of Toronto, and one of the expert mentors at the Summer Institute. “It amazes me to see quality ideas emerge that could lead to real products. This is a testament to the extremely hard work the trainees put in during the week and it’s an absolute pleasure working with the students and mentors.”
Team 1 won the pitch competition for designing an automated rapid communication tool to enhance safety during guided hikes and outdoor recreation tours for seniors. The device would detect if someone falls, stops moving, gets separated or signals for help—and instantly alert group members through haptic, visual and auditory feedback.
AGÉ-WELL is the only pan-Canadian network that brings everyone together—researchers, commercial enterprises, community organizations, consumers and others—to develop technology-based solutions for healthy aging. As such, partnerships are central to everything we do.

In three years, AGÉ-WELL has grown from 80 initial partners to include more than 250 organizations. The number and range of those partnerships increased last year, including new connections forged with Sun Life Financial and Fasken Martineau LLP. And we got into publishing: AGÉ-WELL is now the lead institutional sponsor of a new media initiative called YouAreUNLTD which aims to change the conversation on aging. The lead brand sponsor and distribution partner for YouAreUNLTD is Wellwise™ by Shoppers Drug Mart.

Last year, we were thrilled to announce two new AGÉ-WELL Core Facilities which now support our activities. The Canadian Centre for Elder Law (CCEL), dedicated to exploring the particular legal issues that affect older Canadians, was named an AGÉ-WELL Core Facility in Elder Law. The Ward of the 21st Century (W21C), a Calgary-based initiative that aims to enhance patient safety and quality of care, became an AGÉ-WELL Core Facility in Human Factors and Usability Testing.
Our institutional connections are thriving and so are the connections we make every day with end-users. Success depends on the active engagement and participation of the people who will actually use the technologies and services developed through our research.

Every year we draw our multi-sectoral network together for face-to-face interaction at the AGE-WELL Annual Conference. AGE-WELL 2017 featured presentations, discussions, networking and demonstrations designed to maximize knowledge exchange.

AGE-WELL’s interactions with decision-makers have intensified. Our network is now informing policy and discussions on pressing issues, including through submissions to federal committees such as the House of Commons Standing Committee on Human Resources, Skills and Social Development and the Status of Persons with Disabilities. An AGE-WELL team recently contributed to a policy change which aims to improve the process of finding Canadians who wander or get lost [see page 24].

Beyond Canada’s borders, AGE-WELL continues to be in demand. Network members were invited to join in two high-profile government missions to Asia. We are involved in major international initiatives, including one with the Canadian Institutes of Health Research (CIHR) to provide a major funding opportunity for Canadian researchers through the European Commission’s Active and Assisted Living (AAL) Programme.

- Seoul, Singapore, Beijing, Ljubljana, Dublin, Hong Kong—those are just some of the places where AGE-WELL researchers presented research and shared expertise in the past year. We made a splash in San Francisco, where AGE-WELL co-hosted an unprecedented “Tech Day” at the International Association of Gerontology and Geriatrics (IAGG 2017) World Congress in July 2017.

Jeanie Zabukovec, AGE-WELL research program manager, at IAGG.
International leadership

AGE-WELL is punching above its weight globally as a leader in technology and aging. Some examples:

AGE-WELL investigator Dr. Rosalie Wang presented to a session at United Nations Headquarters in New York. The focus: digital skills for the aging population. Speaking at a side event at the 56th session of the UN’s Commission for Social Development, Dr. Wang, a U of T/Toronto Rehab scientist, told attendees that Canadian research in the area of user-centred design offers solutions to the challenge of developing technologies to support older adults. The event was co-sponsored by the Permanent Mission of Japan to the UN and Waseda University in Tokyo.

AGE-WELL’s scientific director Dr. Alex Mihailidis was elected a vice president of the Active and Assisted Living Association. The association manages the Active and Assisted Living (AAL) Programme, which is a global pioneer in the technology and aging sector. The AAL Programme funds applied research for developing ICT-based (information & communication technology) innovation in order to enhance the quality of life of older people.
Emma Smith, an AGE-WELL trainee and PhD student at the University of British Columbia, worked on the World Health Organization’s Global Cooperation on Assistive Technology (GATE) initiative as a UBC Friedman Scholar at Maynooth University in Ireland. Smith led a position paper on personnel required for the provision of assistive technology (AT) globally. She also contributed to a paper on AT policy. Her work with GATE took her to Malawi to work on a national AT Policy analysis.

Dr. Lili Liu, a University of Alberta professor, and Dr. Pooja Viswanathan, CEO of Braze Mobility Inc., represented AGE-WELL at the Canadian Healthy Aging Business Forum in Beijing in March 2018. They took part in panel discussions and networking to engage new potential partners in China. John McCallum, Canada’s Ambassador to China, opened the inaugural forum.

AGE-WELL hosted a workshop at the International Federation on Ageing’s 14th Global Conference on Ageing, held in Toronto in August 2018. The workshop focused on pathways to innovation, and answering the question: “How can Canada bridge the gap between policy and solutions in the aging and technology space?” AGE-WELL members also presented as part of an innovation case study workshop. On the last evening, AGE-WELL helped to host a networking event for Canadian researchers and international partners. The event was led by the Canadian Institutes of Health Research (CIHR) Institute of Aging and jointly hosted with the Alzheimer Society of Canada, the Canadian Association on Gerontology and the Research Centre on Aging.
AGE-WELL has a strong and effective Board of Directors whose members have an incredibly rich and wide range of skills, expertise and experience from across the private, university and public sectors. The Board has provided indispensable strategic and organizational direction through the first three years of the network. With AGE-WELL’s first five-year mandate ending in 2020, the Board is also thoughtfully guiding AGE-WELL through the stages of renewal planning. This includes its work on refining the network vision and mission statements that will carry AGE-WELL into its next NCE mandate and beyond.

Talk to any of our Board members and you will immediately sense their passion for the work AGE-WELL does. In May 2018, we welcomed Mimi Lowi-Young as our new Board chair. She brings more than 30 years of experience as a senior health-care leader, including as former CEO of the Alzheimer Society of Canada.

AGE-WELL is indebted to our founding Board chair Mike Harcourt who was instrumental in building the network and steering it towards its accomplishments in the first three years. With his term ending, he now serves as patron of AGE-WELL, a role in which he continues to champion AGE-WELL, with a special focus on training future innovators.

Along with our Board members, we are fortunate to have two advisory committees to the Board, our International Scientific Advisory Committee and Research Management Committee, both of which are integral to our success.

The day-to-day management of AGE-WELL is the responsibility of a small, dedicated and highly-qualified group of individuals. This is the team that implements policy and programs. More recently, it has led a renewal process that is helping us to define our priorities for 2020-2025—and how AGE-WELL can best serve older Canadians and their caregivers. As part of this process, AGE-WELL voluntarily undertook a comprehensive mid-term network review last year. We also held “network renewal roadshows” in five Canadian cities to engage in a valuable dialogue with stakeholders.

AGE-WELL is well-advanced with its strategy for the future. We are taking a bottom-up approach to designing the “2.0” research program to ensure this program is based on policy priorities and the needs of our stakeholders. In its next phase, AGE-WELL will maintain a focus on entrepreneurship and impact, global leadership and creating a community of practice that allows innovation to flourish. It will build on its successes and strengths to date, while maximizing opportunities of the network structure to achieve social and economic impact. We look forward to unveiling details soon.

AGE-WELL benefits from the guidance of its stakeholders through six advisory committees which provide vital input and expertise: our Workpackage and Crosscutting advisory committees, Partner Advisory Committee, Older Adult and Caregiver Advisory Committee, HQP Advisory Committee, and the Commercialization and Technology Development Committee.
For Mimi Lowi-Young, one of the most remarkable accomplishments in AGE-WELL’s still young life is how quickly it is finding success in delivering real-world solutions designed to make life better for older people and caregivers.

Now, Lowi-Young, who became chair of the AGE-WELL Board of Directors in May 2018 and has sat on the Board since the network’s launch in 2015, is taking the initiative to the next level—what she calls “AGE-WELL 2.0.”

“There is a tremendous opportunity to further tap the potential of technology to improve the quality of people’s lives if they’re healthy and if they aren’t. That’s what AGE-WELL is all about and I’m proud to be a part of it,” says Lowi-Young.

Lowi-Young assumed the chairmanship after former British Columbia premier Mike Harcourt completed his term as chair. He now serves as patron of AGE-WELL.

Where Harcourt brought a wealth of experience from a life devoted to public service, Lowi-Young comes to the post after spending several decades as a senior health-care leader in both the acute and non-acute sectors of the health-care system, including the areas of complex continuing care and community health.

She understands the challenges of organizational and systemic transformation and renewal, and is as comfortable working with government representatives as she is with frontline health-care professionals.

A Montrealer who trained as a physiotherapist in the 1970s at McGill University, Lowi-Young has served as president and CEO of St. John’s Rehabilitation Hospital and founding CEO of Ontario’s Central West Local Health Integration Network. Most recently, she was CEO of the Alzheimer Society of Canada, where she was a driving force behind Bill C-233, which paves the way for a national strategy for Alzheimer’s disease and other dementias.

For Lowi-Young, the strategy is rooted in personal history: her mother had vascular dementia for years and her father struggled to care for her, to feed her, bathe her and make sure she did rehabilitation exercises she couldn’t remember after she broke her hip.

“What we could have done for them both if we knew then what we do know today,” she says. “I don't think she would have spent the last month of her life intubated in an ICU. We now have a better understanding of the stages of dementia and would be able to provide support for her and my father who, despite some serious chronic health issues, still led a vital life.”

The experience still drives what she sees as her “mission in life” to find ways to improve the quality of life of seniors and support them aging gracefully. ■
Testimonials

“What AGE-WELL is doing is phenomenal. It’s an organization that’s helping entrepreneurs—and innovations—to get into the market. Startups and small businesses are such big creators of new jobs in Canada. So it’s great that AGE-WELL is supporting startups, encouraging entrepreneurship and fostering innovation ecosystems.”

Noureddin Chahrour, Founder and President, Adrenalease Inc.

“AGE-WELL conducts outstanding, world-class research and technology innovation to support healthy aging, and has positioned Canada as a global leader in addressing one of the grand challenges facing the world in the coming decades—the well-being of older adults.”

Dr. David Lindeman, Director CITRIS Health, CITRIS (Center for Information Technology Research in the Interest of Society) and the Banatao Institute, University of California; Director, Center for Technology and Aging

“Through advances in health care, we have successfully extended people’s lifespans. AGE-WELL is about bringing quality and independence to these added years with technologies that are accessible, impactful and sustainable. When older adults live their best lives, we all benefit from their wisdom and experience.”

Jolene McNeil, member of the AGE-WELL Partner Advisory Committee; National Modality Manager, Patient Care and Monitoring Solutions, Philips Healthcare

“As someone who cares for two aging parents with cognitive and mobility issues, I appreciate that AGE-WELL is developing technologies that will make things easier and better for us in the future. AGE-WELL breaks down silos and aims to create solutions faster—and more affordably—both for the aging population and those who care for them.”

Mary Huang, family caregiver
“AGE-WELL is the bridge between the research into the real world, though funding, through networking, through conferences, and educational avenues. It brings together all of the different stakeholders and expertise to really design and develop products that are useful for the individuals that it is targeting. AGE-WELL has certainly helped my research come to life in the real world.”

Dr. Andrea Wilkinson, AGE-WELL trainee and Postdoctoral Research Fellow, University of Toronto

“Until AGE-WELL, there has not been a coordinated effort to provide focused technologies that promote independence and enable older adults to live within their own environment. AGE-WELL has made tremendous progress in the development of solutions that enhance quality of life so that seniors can do the things they want to do the way they want to do them.”

Dr. Bill Miller, AGE-WELL investigator; Professor, Occupational Science and Occupational Therapy, and Associate Dean, Health Professions, University of British Columbia

“With the rapid advancement in technology, we need to capitalize on Canada's leading-edge research and bring together all stakeholders to ensure technologies are seamlessly integrated into health-care systems. AGE-WELL is a network that is already doing this through multidisciplinary project teams and the inclusion of older adults and caregivers at every stage of their work. AGE-WELL is truly driving innovation and making Canada a leader in the area of technology and aging.”

Senator Art Eggleton, P.C.

“AGE-WELL believes that social, health and economic frontiers can be advanced through research and innovation. Like a space agency with an audacious vision, their organizational culture is founded upon the pursuit of excellence, a broad and cross-disciplinary network of partners, and the training of emerging researchers.”

Dr. Robert Thirsk, engineer, physician, former Canadian astronaut and Chancellor Emeritus, University of Calgary
Research Themes

AGE-WELL research projects are organized into eight Workpackages, supported by four Crosscutting Activities: knowledge mobilization; commercialization and technology transfer; transdisciplinary working; and training and mentorship.

WP 1: NEEDS-OA
Understanding the Needs of Older Adults
To most effectively harness the power of technology and translate it into practical solutions, it is crucial that the people who will be using it are consulted and fully involved from the early stages right through product testing and marketing. NEEDS-OA is centred on understanding the needs of older adults related to technology, and on developing tools to include them in technology development.

WP 2: NEEDS-CG
Understanding the Needs of Caregivers
Family caregivers are critical to the health and support of older people. The aim of NEEDS-CG is to gain greater insight into how to better support caregivers. The goal is to support the development of novel technologies that can provide more effective and efficient care, reduce the burdens and consequences of care, and also enhance the quality of life of caregivers. We are developing strategies to assist caregivers in making more informed decisions on the selection of technologies.

WP 3: TECH-FAI
Technology for Supporting Functional Autonomy and Independence
Approximately one-quarter of Canadian seniors report having some kind of physical, cognitive or sensory impairment that affects their ability to perform common activities of daily living. TECH-FAI research focuses on two areas: technologies that can support older adults in the home and community with cognitive tasks, and technologies that address physical impairments and disabilities faced by older adults that often severely restrict their mobility and ability to remain independent.

WP 4: TECH-APS
Technology for Active Participation in Society
Social interaction and support are consistently identified as key aspects of seniors’ quality of life. Lack of communication has been shown to lead to isolation and loneliness, which can result in problems such as depression and cognitive decline for older adults. TECH-APS explores novel technologies that encourage and enable greater social interaction for older adults, and support social participation, including technologies for collaborative play, learning and knowledge sharing.
WP 5: TECH-DD
Technology for Reduction and Prevention of Disease and Disability
Chronic conditions such as cardiovascular diseases, diabetes or physical injuries due to falls and other accidents have significant costs for people, the health-care system and the Canadian economy. However, close monitoring of chronic conditions can significantly reduce their effects. In addition, regular activity and exercise in older adults is associated with an overall improvement in health, functional capacity, quality of life and independence. TECH-DD is producing technologies and tools that will help to actively engage older adults in society.

WP 6: TECH-MCH
Technology for Maintaining Good Mental and Cognitive Health
Currently, 747,000 Canadians have some type of cognitive impairment, including dementia. This number is expected to double to 1.4 million by 2031. Furthermore, 20 per cent of Canadian seniors are living with a mental illness, anxiety and depression. Pain tends to be under-reported and not treated, resulting in agitation and aggression, while mood disorders often go untreated. TECH-MCH will result in new technologies in an area that has been largely ignored in the technology and aging field.

WP 7: POLICY-TECH
Health Systems, Practice, Policy and Regulatory Issues
While technological innovation offers tremendous new opportunities, there are challenges in relation to policy, regulation and decision-making in the care of older persons. It is also important to understand how different sectors and stakeholders can work together to develop innovative solutions. POLICY-TECH will deliver in-depth information that will be crucial for AGE-WELL partners as they attempt to bring new technologies and tools to the market. The research will also drive new health-care policies.

WP 8: ETHICS-TECH
Ethical, Cultural and Social Aspects of Technology
The use of new and advanced technologies in the care and support of older adults poses significant social and ethical questions, particularly in areas such as robotics, artificial intelligence and sensors that collect potentially sensitive data. ETHICS-TECH is developing advice and methodology to assist researchers and policymakers who are exploring aging, disability and technology. The research also investigates ethical, privacy and security factors that are most likely to contribute to disparities in the usage of emerging technologies.

For more details, visit www.agemwell-nce.ca
# Financial Statements

## STATEMENT OF FINANCIAL POSITION

**AGE-WELL NCE Inc.**

As at March 31

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>274,454</td>
<td>161,274</td>
</tr>
<tr>
<td>Due from University Health Network</td>
<td>8,105,867</td>
<td>7,804,102</td>
</tr>
<tr>
<td>Unspent research grants held at participating institutions</td>
<td>1,392,801</td>
<td>1,756,759</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>80,736</td>
<td>60,895</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>26,030</td>
<td>9,990</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9,879,888</td>
<td>9,793,020</td>
</tr>
</tbody>
</table>

|                  |            |            |
| **LIABILITIES AND NET ASSETS** |            |            |
| Current          |            |            |
| Unearned revenue | 43,416     | 26,440     |
| Accounts payable and accrued liabilities | 215,050    | 197,789    |
| **Total current liabilities** | 258,466    | 224,229    |
| Deferred contributions | 9,421,438 | 9,456,134 |
| **Total liabilities** | 9,679,904  | 9,680,363  |

| **Net assets**   |            |            |
| Unrestricted     | 199,984    | 112,657    |
| **Total**        | 9,879,888  | 9,793,020  |

On behalf of the Board:

Mimi Lowi-Young, Chair, Board of Directors
Barbara Stymiest, Chair, Finance and Audit Committee

Please refer to the audited financial statements on the AGE-WELL NCE website: www.agewell-nce.ca
## STATEMENT OF OPERATIONS AND CHANGES IN UNRESTRICTED NET ASSETS

### AGE-WELL NCE Inc.

**Year Ended March 31**

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Networks of Centres of Excellence grant</td>
<td>8,102,942</td>
<td>7,320,719</td>
</tr>
<tr>
<td>Grant from other partners/organizations</td>
<td>142,926</td>
<td>163,300</td>
</tr>
<tr>
<td>Other sources of funds</td>
<td>121,376</td>
<td>67,202</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td>8,367,244</td>
<td>7,551,221</td>
</tr>
<tr>
<td><strong>EXPENSES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research and training</td>
<td>6,839,914</td>
<td>6,170,053</td>
</tr>
<tr>
<td>Networking meetings and events</td>
<td>339,286</td>
<td>387,077</td>
</tr>
<tr>
<td>Communications</td>
<td>100,641</td>
<td>92,352</td>
</tr>
<tr>
<td>Professional fees</td>
<td>29,254</td>
<td>60,451</td>
</tr>
<tr>
<td>Travel</td>
<td>34,150</td>
<td>26,070</td>
</tr>
<tr>
<td>Administration</td>
<td>936,672</td>
<td>778,496</td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td>8,279,917</td>
<td>7,514,499</td>
</tr>
<tr>
<td><strong>Excess of revenue over expenses for the year</strong></td>
<td>87,327</td>
<td>36,722</td>
</tr>
<tr>
<td><strong>Unrestricted net assets, beginning of year</strong></td>
<td>112,657</td>
<td>75,935</td>
</tr>
<tr>
<td><strong>Unrestricted net assets, end of year</strong></td>
<td>199,984</td>
<td>112,657</td>
</tr>
</tbody>
</table>

Cash and in-kind contributions from partners held and spent at network member institutions are not included in these statements.

The Network follows the deferral method of accounting for contributions which include government and other grants. Deferred contributions represent unspent resources externally restricted for program expenses in future years. Changes in the deferred contributions balance are as follows:

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance, beginning of year</strong></td>
<td>9,456,134</td>
<td>8,626,100</td>
</tr>
<tr>
<td>Amounts received during the year – NCE</td>
<td>8,111,672</td>
<td>8,085,560</td>
</tr>
<tr>
<td>Amounts received during the year – Non NCE</td>
<td>99,500</td>
<td>228,493</td>
</tr>
<tr>
<td><strong>Total Amounts Received</strong></td>
<td>(8,245,868)</td>
<td>(7,484,019)</td>
</tr>
<tr>
<td><strong>Amounts recognized as revenue during the year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Balance, end of year</strong></td>
<td>9,421,438</td>
<td>9,456,134</td>
</tr>
</tbody>
</table>

The first tranche of funding from NCE was received March 26, 2015.

Please refer to the audited financial statements on the AGE-WELL NCE website: www.agewell-nce.ca
Network Community
as of September 2018

Member Universities and Research Centres

Baycrest Centre for Geriatric Care
Bruyère Research Institute
Carleton University
Centre de recherche de l’Institut universitaire de gériatrie de Montréal (CRIUGM)
Collège Méridi
Dalhousie University
First Nations University of Canada
George Brown College
Health Sciences North Research Institute
Laurentian University
McGill University
McMaster University
Montreal Heart Institute
Ontario Shores Centre for Mental Health Sciences
Ryerson University
Simon Fraser University
Sunnybrook Research Institute
TÉLUQ – Université du Québec
Trent University
The Research Institute of the McGill University Health Centre
Université de Montréal
Université de Sherbrooke
Université du Québec à Montréal
Université Laval
University Health Network
University of Alberta
University of British Columbia
University of Calgary
University of Guelph
University of Manitoba
University of New Brunswick
University of Northern British Columbia
University of Ottawa
University of Regina
University of Saskatchewan
University of Toronto
University of Victoria
University of Waterloo
Western University
Wilfrid Laurier University

Partners

6Harmonics
Abbvie
Active and Assisted Living Programme (AAL)
Active4Care
ADL Smartcare
AdvantAge Ontario
Aerial Technologies Inc.
AHS- Glenrose
Alberta Association on Gerontology
Alberta Health
Alberta Health Services
Alberta Innovates
Alberta Therapeutic Recreation Association
Algonquin College
AllerGen NCE
Alzheimer Association of Calgary
Alzheimer Society of Canada
Alzheimer Society of Manitoba
Alzheimer Society of Ontario
Ambient Activity Technologies
Amintro Inc
Annapolis Valley Health
Ashbourne (Assisted Living)
Atlantic Institute on Aging
Aunege
Baptist Housing
Baycrest Centre for Learning Research and Innovation
BC Care Providers Association
BC Silver Alert
BC Therapeutic Recreation Association
Belmont House
Bereskin & Parr LLP
Big Motion
BioCanRx NCE
Blackberry
Blue Tree
BlueForce Living
Boston Scientific
Bowmont Seniors Assistance Association
Breton Ability Centre
Bruyère Research Institute
Burnaby Multicultural Society
Canadian Agency for Drugs and Technologies in Health
Partners continued

Canadian Assistive Devices Association
Canadian Association of Occupational Therapists
Canadian Association on Gerontology
Canadian Centre for Elder Law
Canadian Frailty Network [CFN]
Canadian Homecare Association
Canadian Respiratory Research Network
Cardiac Arrhythmia Network of Canada - CANet
Caregiver Omnimedia Inc.
Caregivers Alberta
Caregivers Association of Alberta
CARP
Carya Society of Calgary
CBI Health Group Incorporated
CEFRIO
Centre de réadaptation Constance-Lethbridge
Centre de recherche publique [SAVIE]
Centre de recherche sur le vieillissement [CDRV]
Centre de santé et de services sociaux de la Montagne [CSSS-DLM]
Centre for Assistive Technology and Connected Healthcare, University of Sheffield [CATCH]
Centre for Digital Media
Centre for Education and Research on Aging & Health, Lakehead University
Centre for Hip Health and Mobility
Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal [CRIR]
Centre for International Research on Care, Labour and Equalities [CIRCLE]
Centre interdisciplinaire de recherche en réadaptation et intégration sociale [CIRRIS] - Université Laval
Centre of Excellence on Partnership with Patients and the Public
Centre on Aging, University of Manitoba
Century Group
Champlain Community Care Access Centre
Chartwell Retirement Residences
Choices in Community Living Inc.
Christie Gardens Apartments and Care
CIHR Institute of Aging [IA]
CIHR Institute of Health Services and Policy Research [IHSPR]
Circle of Care
City of Surrey
Clearpath Robotics
Communitech
Community Trust Endowment Fund
CrossWing, Inc.
CSA Group
Data Performers
Deliberatus Design
Delta View Enrichment Centre
Digital Dackel Inc.
Digital Health Hub
DJP Designs
Emmetros Limited
Employers for Carers UK
Employment and Social Development Canada
Engage Biomechanics
ETreatMD
Extendicare [Canada]
Fasken Martineau LLP
File Hills Qu’Appelle Tribal Council
Fraser Health
G. F. Strong Rehabilitation Centre
George Brown College
GeronTech LTD
Gilbrea Centre for Studies in Aging, McMaster University
GlycoNet NCE
Government of New Brunswick Department of Health
Government of Yukon Department of Health and Social Services
Granville Gardens
Guanghua International Education Association
Gyro Club of Edmonton
HACKING HEALTH
HealthTech Connex
Heuristext Inc.
Hexyo Scientific Inc.
HUDDOL Inc
IBM Canada Ltd.
i-Edit
IMAGINE Citizens
Impact Centre, University of Toronto

continued on next page
Partners continued

Indes
Inertia Engineering
Institut de réadaptation Gingras-Lindsay de Montréal
Institute for Life Course & Aging, University of Toronto
Institute on Aging and Lifelong Health, University of Victoria
JDQ Systems Inc.
Jean-François Champollion University Center for Teaching and Research
JLG Health Solutions
Johnson & Johnson
KeeBee
Kerrisdale Community Centre
Kids Brain Health Network
Kingston General Hospital
Kinova
Kiwanis
Lawson Health Research Institute, Western University
Life Science Nation
Lifestyle Options Retirement Communities
Ludoscience
Manitoba Association of Senior Centres
March of Dimes Canada
Mavencare
McMaster Institute for Research on Aging [MIRA]
MDA Space Missions
MEDEC
MediPense
MEDTEQ
Memory and Company
Merz Pharma Canada
Microsoft
Mindful Scientific
Minoru Place Activity Centre
Mircom
Mitacs
Mobisafe System
Mount Pleasant Neighbourhood House
MultiMension
Myant
N’Mminoeyaa Indigenous Health Access
Nak’albun School
Nak’azdli Health Centre
National Initiative for the Care of the Elderly [NICE]
National Institute on Ageing
New Brunswick Community College
New Brunswick Health Research Foundation
New Vista Society
North Lantau Hospital
Northumberland PATH Project
Nova Scotia Centre on Aging, Mount Saint Vincent University
OCAD University
Ontario Bioscience Innovation Organization [OBIO]
Ontario Brain Institute [OBI]
Ontario Centres of Excellence [OCE]
Ontario Dementia Advisory Group [ODAG]
Ontario Institute for Regenerative Medicine
Ontario Ministry of Health and Long-Term Care
Ontario Society of Occupational Therapists
Ontario Telemedicine Network [OTN]
Orthofab
Oshawa Senior Citizens Centres
Otsuka America Pharmaceuticals
Palmerston Bay Inc.
ParaMed Inc.
Parkinson’s Clinic of Eastern Toronto and Movement Disorders Centre
Partners Advancing Transitions in HealthCare
Patterson Medical
Philips Healthcare
PhysioAtlas
Point Grey
Port Moody Heritage Society
Prism Medical
Project Whitecard Digital
Pronura Diagnostics Corp.
Proximify
Quanser Inc.
Quebec Network for Research on Aging
Quillsoft
Regina Qu’Appelle Health Authority
Regroupement des aidantes et aidants naturels de Montréal [R.A.A.N.M]
Réseau provincial de recherche en adaptation-réadaptation [REPAR]
Partners continued

Revera Inc.
Rick Hansen Institute [RHI]
Riverview Health Centre
Royal Ottawa
Safetracks GPS Canada Inc.
Saint Elizabeth Health Care
Saint Joseph Geriatric Care
Samsung
Saskatchewan Ministry of Health, Community Care Branch
SATech
Semaphore Lab, University of Toronto
Seniors Care Network
Seniors Health Knowledge Network
Sensimat
Sermax
Sheridan College
Silver Harbour
SiR2N Partners Inc.
Southern Ontario Smart Computing Innovation Platform
Special Interest Group on Computer–Human Interaction [SIGCHI]
STF Technologies
Strafford Foundation
Sun Life Financial Inc.
Sunnybrook Veterans Hospital
Tactica Interactive Inc.
Tactile Audio Displays Inc.
Tapestry at Wesbrook Village
Technicalities Plus Inc
Tekscan
TelASK
TELUS Health
TELUS Ventures
The Caregiver Network
The Centre for Health Law, Policy and Ethics, University of Ottawa
The Schlegel-University of Waterloo Research Institute for Aging [RIA]
Thornebridge Gardens
Toronto Rehab – UHN
Tridel
UBER
United Way of the Lower Mainland
Vancouver Coastal Health Research Institute
Vanier Institute of the Family
VentureLab
VHA Home HealthCare
Victoria Lifeline
Vigilent Telesystems
Ward of the 21st Century (W21C) Innovation and Research Centre, University of Calgary
We Rage We Weep Alzheimer Foundation
Wellwise™ by Shoppers Drug Mart
West Vancouver Seniors’ Activity Centre
Western Isles Health Authority
Western Ottawa Community Resource Centre
Women’s Brain Health Initiative
WorkSafeBC
York Care Centre

Network Investigators

Directly funded by AGE-WELL

Sara Ahmed, McGill University Health Centre
Philippe Archambault, McGill University
Arlene Astell, Ontario Shores Centre for Mental Health Sciences
Claudine Auger, Université de Montréal
Ronald Baecker, University of Toronto
Éric Beaudry, Université du Québec
Jennifer Boger, University of Waterloo
Carrie Bourassa, First Nations University of Canada
Felix Breden, Simon Fraser University
Jack Callaghan, University of Waterloo
Mark Chignell, University of Toronto
Virginie Cobigo, University of Ottawa
Andrea Creech, Université Laval
Eyal de Lara, University of Toronto
Louise Demers, Université de Montréal
Tilak Dutta, Toronto Rehab – UHN
Martin Ester, Simon Fraser University
Janet Fast, University of Alberta

continued on next page
Network Investigators
Directly funded by AGE-WELL

Deborah Fels, Ryerson University
Dolores Furlong, University of New Brunswick
Uwe Glasser, Simon Fraser University
Cynthia Goh, University of Toronto
Rafik Goubran, Carleton University
Amanda Grenier, McMaster University
Diane Gromala, Simon Fraser University
Manon Guay, Université de Sherbrooke
Thomas Hadjistavropoulos, University of Regina
John Hirdes, University of Waterloo
Sander Hitzig, Sunnybrook Research Institute
Jesse Hoey, University of Waterloo
Réjean Hébert, Université de Montréal
Kristen Jacklin, Laurentian University
Susan Jaglal, University of Toronto
Mandar Jog, Western University
Regina Jokel, University of Toronto
Marc Jolicœur, Montreal Heart Institute
Jeff Jutai, University of Ottawa
Dahlia Kairy, Université de Montréal
David Kaufman, Simon Fraser University
Susan Kirkland, Dalhousie University
Frank Knoefel, Bruyère Research Institute
Karen Kobayashi, University of Victoria
Pia Kontos, Toronto Rehab – UHN
Joon Lee, University of Waterloo
Myles Leslie, University of Calgary
Lili Liu, University of Alberta
Édith Martin, Collège Mérici
Janet McElhaney, Health Sciences North Research Institute
Chris McGibbon, University of New Brunswick
Joanna McGrenere, University of British Columbia
Josephine McMurray, Wilfrid Laurier University
François Michaud, Université de Sherbrooke
Alex Mihailidis, University of Toronto
Bill Miller, University of British Columbia
Ralph Mistlberger, Simon Fraser University
Ian Mitchell, University of British Columbia
Karyn Moffatt, McGill University
Sylvain Moreno, Simon Fraser University
Ben Mortenson, University of British Columbia
Zahra Moussavi, University of Manitoba
Cosmin Munteanu, University of Toronto Mississauga
Hani Naguib, University of Toronto
Goldie Nejat, University of Toronto
Ioannis Nikolaidis, University of Alberta
Alison Novak, Toronto Rehab – UHN
Kieran O’Doherty, University of Guelph
Norm O’Rourke, Simon Fraser University
Francisco-Javier Ollerόs, Université du Québec à Montréal
Ed Park, Simon Fraser University
Rajni Patel, Western University
Johanne Patenaude, Université de Sherbrooke
Hélène Pigot, Université de Sherbrooke
Joelle Pineau, McGill University
Jan Polgar, Western University
Milos Popovic, Toronto Rehab – UHN
Norm O’Rourke, University of British Columbia
Steve Robinovitch, Simon Fraser University
François Routhier, Université Laval
Frank Rudzicz, Toronto Rehab – UHN
Louise Sauvé, TÉLUQ
Andrew Sixsmith, Simon Fraser University
Carolyn Sparrey, Simon Fraser University
Paul Stolee, University of Waterloo
Megan Strickfaden, University of Alberta
Eleni Stroulia, University of Alberta
Babak Taati, Toronto Rehab – UHN
Michel Tousignant, Université de Sherbrooke
Mike VanderLoos, University of British Columbia
Brenda Vrkljan, McMaster University
Jennifer Walker, Laurentian University
Rosalie Wang, University of Toronto
Bruce Wallace, Carleton University
Michael Wilson, McMaster University
Robert Wu, University of Toronto
Azadeh Yadollahi, Toronto Rehab – UHN
Herbert Yang, University of Alberta
Paul Yoo, University of Toronto
NETWORK COMMUNITY as of September 2018

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Barbara Stymiest, [Vice-Chair] Corporate Director
Larry Baldachin, EVP and Chief Business Officer, University Health Network
Eric Bosco, Chief Business Development & Partnerships Officer, Mitacs
Jim Brookes, Retired Telecom Executive
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Susan Kirkland, Professor, Dalhousie University
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Rich Osborn, Managing Partner, TELUS Ventures
Andrew Sixsmith, Scientific Director, AGE-WELL
Robyn Tamblyn, Professor, McGill University
Aaron Unger, Corporate Finance Consultant
Stewart Fast, [Observer] Senior Program Manager, NCE Secretariat
Bridgette Murphy, [Observer] Managing Director, AGE-WELL

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Robyn Tamblyn, [Chair] Professor, McGill University
Anthea Tinker, [Vice-Chair] Professor, King’s College London, UK
James Barlow, Professor, Imperial College Business School, UK
Anne Martin-Matthews, Professor, University of British Columbia [On leave]
Lawrence Normie, Consultant, Advanced Technologies Evaluation & Planning
Stewart Fast, [Observer] Senior Program Manager, NCE Secretariat
Alex Mihailidis, [Observer] Scientific Director, AGE-WELL
Bridgette Murphy, [Observer] Managing Director, AGE-WELL
Andrew Sixsmith, [Observer] Scientific Director, AGE-WELL
Jennifer Wong, [Observer] Research Program Administrator, AGE-WELL

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Alex Mihailidis, [Chair] Scientific Director, AGE-WELL
Louise Demers, Professor, Université de Montréal
Susan Jaglal, Professor, University of Toronto
Jeff Jutai, Professor, University of Ottawa
Karen Kobayashi, Professor, University of Victoria
Vicki Komisar, President, HQP Advisory Committee; Postdoctoral Fellow, Simon Fraser University
Pia Kontos, Senior Scientist, Toronto Rehab – UHN
Jim Mann, Community Member and Alzheimer’s Advocate
Rich McAloney, Director, Technology Management & Entrepreneurship, Impact Centre, University of Toronto
Sandra McKay, Manager, Research & Evaluation, VHA Home Healthcare
Ivar Mendez, Unified Head, Department of Surgery, University of Saskatchewan and Saskatoon Health Region
Cosmin Munteanu, Professor, University of Toronto Mississauga
Andrew Sixsmith, Scientific Director, AGE-WELL
David Wright, Partner & Publisher, YouAreUNLTD
Stewart Fast, [Observer] Senior Program Manager, NCE Secretariat
Bridgette Murphy, [Observer] Managing Director, AGE-WELL
Jennifer Wong, [Observer] Research Program Administrator, AGE-WELL
Partner Advisory Committee (Executive)

Mary Lou Ackerman, VP Business Development, Saint Elizabeth Health Care
Sanjeev Gill, National Industry Executive, IBM Canada
Kevin Harter, Executive Director, AGE-WELL National Innovation Hub (APPTA)
Dan Kohl, Executive Director, Regina Qu’Appelle Health Region
Jolene McNeil, Director, Hospital to Home Canada, Philips Healthcare
Stephen Sutherland, CEO, CrossWing Inc.
Alex Mihailidis, (Observer) Scientific Director, AGE-WELL
Bridgette Murphy, (Observer) Managing Director, AGE-WELL
Dorina Simeonov, (Observer) Policy & Knowledge Mobilization Manager, AGE-WELL
Andrew Sixsmith, (Observer) Scientific Director, AGE-WELL

Committee for Technology Development and Commercialization (Executive)

Isi Caulder, Associate, Bereskin & Parr
Sandra Crocker, Associate Vice President, Carleton University
Ian Hand, Executive Director, VentureLabs
Scott Inwood, Director of Commercialization, University of Waterloo
Hassan Jaferi, Commercialization Manager, Sunnybrook Health Sciences Centre
Joanna Preston, Associate Director, Technology Management, University of Alberta
Mike Walker, Assistant Director, University of Ottawa
Gay Yuyitung, Executive Director, McMaster University
Alex Mihailidis, (Observer) Scientific Director, AGE-WELL
Bridgette Murphy, (Observer) Managing Director, AGE-WELL
Andrew Sixsmith, (Observer) Scientific Director, AGE-WELL
Older Adult and Caregiver Advisory Committee

Phil Davis, Co-Chair and Ontario Region Representative, Ontario
Ron Beleno, Co-Chair, Ontario
Sherry Baker, Vice-Chair, British Columbia
Caron Leid, Vice-Chair, Ontario
Doug Gayton, Pacific Region Representative, British Columbia
Marjorie Moulton, Pacific Region Representative, British Columbia
G. Burn Evans, West-Central Region Representative, Alberta
Lisa Poole, West-Central Region Representative, Alberta
Chaitali Desai, Ontario Region Representative, Ontario
Kristine Goulet, Quebec Region Representative, Quebec
VACANT, Quebec Region Representative, Quebec
Olive Bryanton, Atlantic Region Representative, Prince Edward Island
VACANT, Atlantic Region Representative
Roger Marple, Member at Large, Alberta

HQP Advisory Committee

Vicki Komisar, (President) Posdoctoral Fellow, Simon Fraser University
Kedar Mate, (Vice-President) Graduate Student - Doctoral, Rehabilitation Sciences, McGill University
Victoria Young, (Vice-President) Visiting Research Fellow (Postdoctoral), Research, York Region Paramedic and Senior Services
Andrea Bandini, Postdoctoral Fellow, Engineering Science, Toronto Rehab – UHN
Jiamin Dai, Graduate Student - Doctoral, Information Studies, McGill University
Gary Germeil, Graduate Student - Doctoral, Science and Technology, TÉLUQ
Maggie MacNeil, Graduate Student - Doctoral, School of Public Health & Health Systems, University of Waterloo
Noelannah Neubauer, Graduate Student - Doctoral, Occupational Therapy, University of Alberta
Arezoo Talebzadeh, Graduate Student - Master’s, Design for Health, OCAD University
Mineko Wada, Postdoctoral Fellow, STAR Institute, Simon Fraser University
Crosscutting Advisory Committee

Susan Jaglal, [Chair] University of Toronto, [CC4 – TRAIN]
Ryan D’Arcy, Simon Fraser University, [CC2 – TECH-TRANS]
Amanda Grenier, McMaster University, [CC1 – K-MOB]
Karen Kobayashi, University of Victoria, [CC1 – K-MOB]
Pia Kontos, Toronto Rehab – UHN, [CC3 – T-WORK]
Lynn McDonald, University of Toronto, [CC1 – K-MOB]
Judith Sixsmith, Simon Fraser University, [CC3 – T-WORK]
Leslie Carlin, [Observer], University of Toronto
Simon Carroll, [Observer], University of Victoria
Igor Gontcharov, [Observer], McMaster University
Alisa Grigorovich, [Observer], University of Toronto
Euson Yeung, [Observer], University of Toronto

NETWORK MANAGEMENT OFFICE

Alex Mihailidis, Scientific Director, AGE-WELL
Andrew Sixsmith, Scientific Director, AGE-WELL
Bridgette Murphy, [Observer] Managing Director, AGE-WELL
Samantha Sandassie, [Observer] Education and Training Program Manager, AGE-WELL
Dorina Simeonov, [Observer] Policy & Knowledge Mobilization Manager, AGE-WELL
Workpackage Advisory Committee

Jeff Jutai, [Chair] University of Ottawa, [WP8 – ETHICS-TECH]
Arlene Astell, Ontario Shores Centre for Mental Health Sciences, [WP1 – NEEDS-OA]
Jerome Bickenbach, Queen’s University, [WP8 – ETHICS-TECH]
Louise Demers, Université de Montréal, [WP2 – NEEDS-CG]
Janet Fast, University of Alberta, [WP2 – NEEDS-CG]
Rafik Goubran, Carleton University, [WP5 – TECH-DD]
Don Juzwishin, Alberta Health Services, [WP7 – POLICY-TECH]
David Kaufman, Simon Fraser University, [WP4 – TECH-APS]
Frank Knoefel, Carleton University, [WP5 – TECH-DD]
Lili Liu, University of Alberta, [WP6 – TECH-MCH]
Bill Miller, University of British Columbia, [WP3 – TECH-FAI]
Cosmin Munteanu, University of Toronto Mississauga, [WP4 – TECH-APS]
Hélène Pigot, Université de Sherbrooke, [WP3 – TECH-FAI]
Paul Stolee, University of Waterloo, [WP7 – POLICY-TECH]
Eleni Stroulia, University of Alberta, [WP6 – TECH-MCH]

NETWORK MANAGEMENT OFFICE

Alex Mihailidis, Scientific Director, AGE-WELL
Andrew Sixsmith, Scientific Director, AGE-WELL
Bridgette Murphy, [Observer] Managing Director, AGE-WELL
Jennifer Wong, [Observer] Research Program Administrator, AGE-WELL
AGE-WELL Administration

SCIENTIFIC DIRECTORS

Alex Mihailidis, Toronto Rehab – UHN
Andrew Sixsmith, Simon Fraser University

NETWORK MANAGEMENT OFFICE
(Toronto Rehab – UHN)

Bridgette Murphy, Managing Director, AGE-WELL
Margaret Polanyi, Senior Communications Manager
Samantha Sandassie, Education and Training Program Manager
Shalini Sethi, Finance Officer
Dorina Simeonov, Policy & Knowledge Mobilization Manager
Krystle Wiltshire, Administrative Coordinator
Jeanie Zabukovec, Research Program Manager (On leave April 2018)
Jennifer Wong, Research Program Administrator

AGE-WELL Core Facilities

The Canadian Centre for Elder Law (CCEL) (Elder Law)
Kathleen Cunningham, Executive Director
Krista James, National Director of the Canadian Centre for Elder Law, Staff Lawyer

The Ward of the 21st Century, University of Calgary (Human Factors and Usability Testing)
Jill de Grood, Director
Greg Hallihan, Human Factors Program Manager

The Impact Centre, University of Toronto (Entrepreneurship)
Cynthia Goh, Director
Rich McAloney, Director, Technology Management & Entrepreneurship
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Photography: Boehmer Photography, Dave Chan, Samuel Cheng, Mathieu Fortin, Hexoskin, Jaime Hogge, John Hyrniuk Photography, Nate Lacroix, Warren Toda, University of Manitoba, University of Waterloo, Jeff Vinnick Images, Krystle Wiltshire