



# Programme de la Conférence EPIC 2025



## Message de bienvenue d'AGE-WELL

J'ai le grand plaisir de vous accueillir une fois de plus à la Conférence EPIC d'AGE-WELL. C'est une année particulièrement significative pour AGE-WELL qui célèbre son 10<sup>e</sup> anniversaire ainsi qu'une décennie de leadership, d'innovation et de collaboration dans l'écosystème de la technologie du vieillissement au Canada.

Née du besoin d'établir des liens pendant la pandémie de COVID-19, la conférence EPIC est devenue un événement annuel qui rassemble une communauté dynamique constituée de personnes âgées, de partenaires de soins, de stagiaires, d'anciens, de chercheurs, de partenaires communautaires, de l'industrie et du gouvernement, ainsi que des entreprises en démarrage soutenues par AGE-WELL. La conférence EPIC, qui en est à sa sixième édition, continue de présenter les idées innovantes qui entraînent des changements réels dans la vie des personnes âgées et des proches aidants.

Nous sommes fiers que la conférence EPIC demeure le plus important événement du genre pour les stagiaires en santé, en vieillissement et en technologie. Attirant plus de 1 000 participants de partout au Canada et de plus de 25 pays dans le monde, la portée de cette conférence illustre l'intérêt mondial accordé au travail que nous accomplissons ensemble.

Nous sommes vraiment honorés de présenter les travaux de recherche en innovation ainsi que les collaborations menés par la prochaine génération de chefs de file dans le domaine de la technologie du vieillissement, tout comme les chercheurs en début de carrière qui président les séances. La conférence EPIC vous donnera l'occasion d'acquérir de nouvelles connaissances, de dialoguer avec des penseurs créatifs et de tisser des liens avec un réseau passionné d'intervenants qui sont déterminés à transformer le vieillissement au moyen de la technologie, des services et des politiques.

Nous sommes également heureux de poursuivre notre segment intitulé Faire avancer les choses, qui met en vedette les partenaires et les entreprises en démarrage d'AGE-WELL qui concrétisent la recherche en élaborant des solutions pratiques permettant d'améliorer la qualité de vie des personnes âgées au Canada et de leurs proches aidants.

Alors que nous nous tournons vers l'avenir, les stagiaires d'AGE-WELL et d'EPIC-AT, les boursiers postdoctoraux, les assistants de recherche et les parties intéressées continueront de jouer un rôle essentiel dans le façonnement de l'innovation mondiale de la technologie du vieillissement. Leur travail de collaboration nous inspire tous et renforce la position du Canada en tant que chef de file mondial dans ce domaine.

Merci de participer à ce cheminement. Je vous invite à tisser des liens, à collaborer et à vous laisser inspirer à l'occasion de la conférence EPIC de 2025, un événement où les innovateurs de demain entrent en scène.



Alex Mihailidis,  
AGE-WELL Vice-président,  
Recherche, Conseil  
d'administration

## Moving the Dial « Faire avancer les choses »

AGE-WELL a mobilisé une vaste communauté de chercheurs, d'organismes partenaires, de personnes âgées, de soignants et de futurs chefs de file afin d'accélérer la mise en œuvre de solutions axées sur la technologie qui apportent un changement significatif dans la vie des Canadiens. Notre objectif consiste à aider les personnes âgées du Canada à conserver leur autonomie, la santé et leur qualité de vie grâce à des technologies et des services qui améliorent leur sécurité, leur permettent de vivre de façon autonome et améliorent leur participation sociale. Notre segment, intitulé « Moving the Dial », soulignera certains des travaux importants soutenus par AGE-WELL.

Nous aimerions remercier les partenaires et les entreprises en démarrage que nous soutenons qui ont accepté de nous expliquer comment ils « faire avancer les choses » et améliorent la qualité de vie des personnes âgées et des aidants naturels du Canada d'un océan à l'autre.

CONFÉRENCE EPIC 2025

« Moving the Dial »

Présentateurs et présentatrices



#AWepic2025

## Reconnaissance des territoires

Bien que nous nous réunissions virtuellement, nous aimerions saluer les peuples autochtones de tous les territoires que nos conférenciers habitent. Nous le faisons pour réaffirmer notre engagement et notre responsabilité à l'égard de l'amélioration des relations entre les nations et de celle de notre compréhension des peuples autochtones locaux et de leurs cultures. Nous vous encourageons à réfléchir au territoire sur lequel vous vous trouvez et à tenir compte de votre relation avec la terre et avec les peuples qui en sont les gardiens traditionnels.

Le Bureau de gestion du réseau d'AGE-WELL exerce ses activités sur les territoires traditionnels de nombreuses nations autochtones, qui ont leur terre à cœur depuis des milliers d'années, y compris les Anishnabeg, les Chippewa, les Haudenosaunee et les Wendat; et nous saluons les détenteurs actuels des traités, soit la Première Nation des Mississauga de Credit. Ce territoire abrite de nombreux peuples des Premières Nations, des Inuits et des Métis, et il est assujéti à l'entente wampum du « bol à une seule cuillère », soit une entente visant à partager en paix et à gérer la région des Grands Lacs.

Nous sommes reconnaissants d'avoir l'occasion de travailler sur ce territoire aujourd'hui et de souligner notre responsabilité de faire avancer le processus de réconciliation. AGE-WELL s'engage à favoriser des pratiques équitables et inclusives dans l'ensemble de ses programmes et mesures et accueille ouvertement les modes de connaissance et de vie autochtones afin de les intégrer explicitement dans ses programmes de recherche et d'éducation.

## Comment participer

La conférence EPIC (2025) est l'occasion pour les AGE-WELL HQP de partager leurs recherches, de mettre en évidence leur impact potentiel et de se connecter avec leurs collègues.

Elle comprendra 8 sessions virtuelles, chacune dédiée à l'un des domaines de défi identifiés. La conférence EPIC est l'occasion pour les étudiants, les stagiaires postdoctoraux, le personnel de recherche et les chercheurs en début de carrière d'AGE-WELL et d'EPIC-AT de présenter leurs recherches aux côtés de leurs partenaires parties prenantes, de souligner leur impact potentiel et de se connecter avec des collègues du monde entier.

La conférence comprendra huit sessions virtuelles, chacune consacrée à l'un des domaines de défi, avec des présentations de dirigeants, de stagiaires, de boursiers et d'anciens étudiants d'AGE-WELL et EPIC-AT, ainsi que de partenaires et de jeunes entreprises soutenues.

Chaque session consacrée à un domaine de défi comportera également un nouveau segment intitulé "Moving the Dial" qui mettra en lumière la manière dont les partenaires d'AGE-WELL et les startups soutenues améliorent la qualité de vie des personnes âgées et des aidants naturels au Canada.

Ces 8 sessions seront organisées sur Zoom et comprendront une introduction à la zone de défi présentée par le président de la session, 2 présentations de recherche avec un ou plusieurs co-présentateurs de parties prenantes pour discuter de leur expérience, et une présentation "Moving the Dial" par une startup ou un partenaire soutenu par AGE-WELL.

Ces sessions permettront aux participants à la conférence EPIC de poser des questions, de se présenter et d'entrer en contact avec d'autres participants.

**La conférence EPIC est gratuite et tout le monde est invité à y participer.**

Inscrivez-vous à toutes les sessions de la zone de défi et à notre atelier EPIC sur la page de la conférence EPIC d'AGE-WELL en cliquant [ici](#).

## Code de conduit

La conférence EPIC (2025) a pour but d'accroître l'interaction, l'engagement, la collaboration, la connectivité et le sens communautaire dans un environnement de respect mutuel. Nous reconnaissons que nous avons la responsabilité commune de créer et de maintenir cet environnement dans l'intérêt de tous. Nous demandons aux conférenciers d'encadrer les discussions de la façon la plus ouverte et inclusive possible et d'être conscients de la façon dont le langage ou les images peuvent être perçus par les autres.

Nous sommes reconnaissants de la participation de chaque membre de la collectivité et nous nous efforçons d'offrir une expérience agréable et enrichissante. Les participants à la conférence EPIC doivent se comporter avec intégrité, courtoisie et respect et maintenir le plus haut niveau de professionnalisme à toutes les séances de l'événement. Les perturbations qui nuisent à l'expérience des autres participants ne sont pas tolérées. Tous les participants, conférenciers, organisateurs, partenaires, commanditaires et membres du personnel sont tenus de respecter ce Code de conduite.

Notre conférence vise à offrir une expérience sans harcèlement à tous, peu importe l'identité et l'expression de genre, l'âge, l'orientation sexuelle, le handicap, l'apparence physique, la taille du corps, la race, l'origine ethnique, les croyances et pratiques religieuses ou spirituelles ou les choix technologiques.

Soyez gentil avec les autres. Abstenez-vous d'insulter ou de rabaisser les participants (par exemple en formulant des commentaires agressifs dans les séances de clavardage ou dans l'application de l'événement ou en adoptant des comportements d'intimidation). Le harcèlement sous toutes ses formes, les blagues âgistes, sexistes, racistes ou d'exclusion ne sont pas tolérées dans le cadre de la conférence EPIC. Les participants à la conférence EPIC qui enfreignent ces règles peuvent être expulsés de l'événement, à la discrétion des organisateurs.

Si vous êtes victime de harcèlement, remarquez que quelqu'un d'autre est victime de harcèlement ou avez d'autres préoccupations, veuillez communiquer immédiatement avec l'équipe organisatrice. Vous pouvez communiquer avec le personnel de l'événement par courriel à [info@agewell-nce.ca](mailto:info@agewell-nce.ca).

Merci de contribuer à faire de la conférence EPIC (2025) un événement accueillant pour tous.



**INSCRIVEZ-VOUS ICI**

**Ouverture de la Conférence EPIC 2025**

Alex Mihailidis, AGE-WELL Vice-président, Recherche, Conseil d'administration  
12:00pm to 12:10 pm ET

Président : Aaron Yurkewich, Ontario Tech University

Présentations :

**Machine learning to detect motor agitation in people with dementia using real-time location data**

*Zain Hasan, University of Toronto, and Adrienne McMahon, Harbourstone Enhanced Care - Shannex Rlc Limited*

**PATH - Program to Accelerate Technologies for Homecare**

*Ali Barzegar Khanghah, KITE-UHN, and Farhad Keramati, SmartONE Solutions Inc.*

**Welbi**

*Nigel Vanderlinden, Welbi*



**INSCRIVEZ-VOUS ICI**

Président : Jessica Wong, Western University

Présentations :

**Developing & Validating a Discrete Event Simulation Tool for Nurse Workload & Patient Care Quality in Complex Continuing Care Settings**

*James Hanratty, Toronto Metropolitan University, and Veroneike Buntin / Gabriella Golea, University Health Network*

**Exploring Ways to Make the Virtual Emergency Department More Accessible to Older Adults**

*Marina Motsenok and Mary Dimeo, Sunnybrook Health Sciences Centre*

**NovaSense**

*Justin Wyss, NovaSense*



**INSCRIVEZ-VOUS ICI**

Président : Viviane Josewski, University of Northern British Columbia

Présentations :

**Supporting Mobility and Independence in Older Adults: A Wearable-Driven Solution for Neighborhood-Specific Challenges**

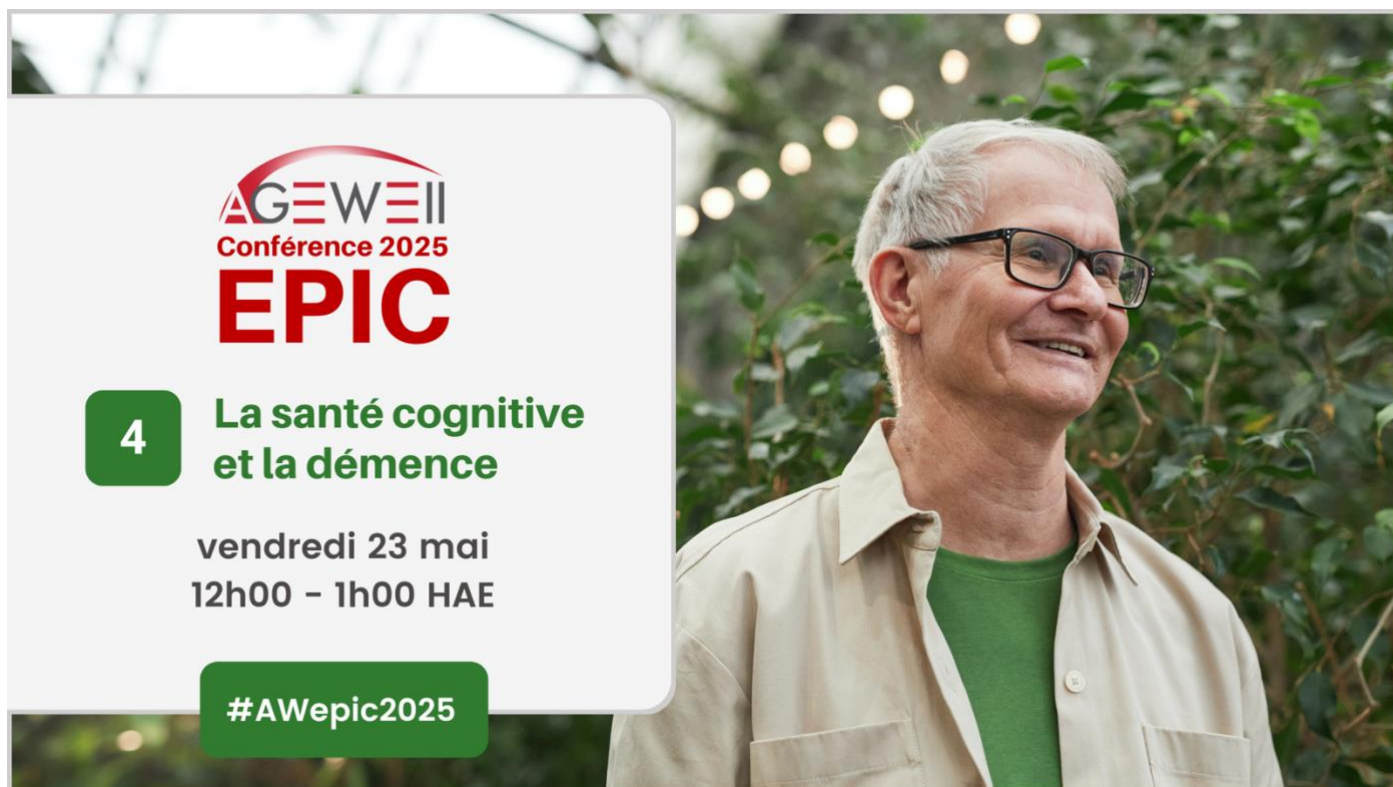
*Ghanim Saqib, University of Alberta, and Maren Bolstler, GEF Seniors Housing*

**Towards a Better Approach for Evaluating the Comfort, Dignity, and Safety of Transfer Technologies Through Integrated Knowledge Translation**

*Nathalie Todamnguepnang, University of Ottawa, and Gale Ramsden, study participant*

**Stediwear**

*Emile Maamary, Stediwear*



**INSCRIVEZ-VOUS ICI**

Président : Bjorn Herrmann, Rotman Research Institute

Présentations :

**Speech and Eye-Movement Analysis for the Remote Early Detection of Cognitive Decline**

*Sina Shafiqyan, Bruyère Health Research Institute, and Gale Griffith, Expert by Experience (EBE)*

**Co-Designing Personalized Reminder Systems with Anomaly Detection**

*Joy Lai, University of Toronto, and David Black, Research Collaborator and Caregiver*

**IncluzIT PRO**

*Marnie Courage, IncluzIT PRO*



**AGEWELL**  
Conférence 2025  
**EPIC**

5

**La mobilité  
et le transport**

mardi 27 mai  
12h00 - 1h00 HAE

#AWepic2025

**INSCRIVEZ-VOUS ICI**

Président : Sayeh Bayet, University of Calgary

Présentations :

**Is a movement-tracking video game (Bootle Blast) feasible for people living with dementia and their caregivers at home?**

*Erica Dove, University of Toronto, and Karen Cotnam, Testing Partner*

**Advancing measurement of daily mobility & transportation: Considerations from a multi-sensor approach**

*Benjamin Cornish, McMaster University, and Ron Beleno, Community Partner*

**WeTraq Inc.**

*Ishaan Singla, WeTraq Inc.*



**[INSCRIVEZ-VOUS ICI](#)**

Président : Cari McIlduff, University of Saskatchewan

Présentations :

**Using Design Thinking to Build Augmented Reality Tools for Effective Balance Training for Older Adults**

*Noorain Mamdani, McMaster University, and Dr. Manuela Kunz, National Research Council Canada*

**Co-Design of a Nurse-Led Digital Care Model to Support Breast Cancer Survivorship and Healthy Aging**

*Jenna Keeble, University Health Network, and Shauna Krajacich, Patient Partner/Rethink Breast Cancer*

**StrongerU Senior Fitness**

*Emily Johnson, StrongerU Senior Fitness*



**INSCRIVEZ-VOUS ICI**

Président : Shane Saunderson, McMaster University

Présentations :

**From print to audio: Adapting to audiobooks after vision loss**  
*Signe Lund Mathiesen, Baycrest Health Sciences, Judith Lawrence, Vision Loss Advisor*

**Ethical considerations in implementing Virtual Reality programs in long-term care settings: Case studies from in Canada and the Czech Republic**  
*Haopu (Lily) Ren, University of British Columbia, and Jim Mann, Patient Partner and Co-Lead*

**Amintro Inc.**  
*Charlene Nadalin, Amintro Inc.*



**[INSCRIVEZ-VOUS ICI](#)**

Président : Mila Kolpashnikova, Western University

Présentations :

**taskIt: An Interface Design Inspired by an Employment Challenge**  
*Shieda Marashi, University of Waterloo, and Rochelle Michaude, Co-Designer*

**Managing Cognitive Impairment at Work: What We Learn from Supporting, Experiencing, and Witnessing It**  
*AnneMarie Levy, Wilfrid Laurier University, and Ryan Thomson, Lethbridge County*

**CPA Canada**  
*Carolyn Goodwin, CPA Canada*

**EPIC Conference 2025 Closing**

# RÉSUMÉS (par ordre alphabétique)

## **Advancing measurement of daily mobility & transportation: Considerations from a multi-sensor approach.** *Benjamin Cornish, McMaster University, and Ron Beleno, Community Partner*

The ability to be mobile is critical for functional independence and for maintaining health and well-being throughout older adulthood. Daily mobility includes any movement throughout our daily lives like walking or bicycling and extends to alternative transportation methods (e.g., driving, public transit). Wearable sensors are an effective tool for capturing the mobility of older adults in daily life, including location (e.g., GPS) and actual activity levels (e.g., step count, physical activity intensity) within and outside the home. Independently these sensors can describe aspects of mobility, but this current work aims to fuse sensor outcomes to overcome individual limitations. Leveraging the multi-sensor setup within the McMaster Monitoring my Mobility study (MacM3 study; n=1556 older adults, 65+ years old), this study aims to advance analytic modules that combine accelerometry and GPS data signals (GPS+). This presentation will discuss our current efforts to fuse sensor data and the strengths of this approach. At the macro-scale, fused GPS outcomes provide detailed mobility characteristics to distinguish and characterize indoor/outdoor activity and patterns of mobility (bouts/trips). At the micro-level, sensor fusions can provide context to and quantify moment-to-moment changes in walking during daily life. Discussion and presentation will be supported with stakeholder involvement to provide an understanding of the potential utility of these outcomes from end-users' perspective to implement changes that might improve health and mobility-related outcomes and further discuss how successful implementation of these analytic approaches will be a significant step forward in measuring mobility in daily life.

## **IncluzIT PRO.** *Marnie Courage, IncluzIT PRO*

Incluzia is focused on advancing accessible housing outcomes through education, technology, and collaboration. As Founder and CEO, Marnie Courage is the creator of IncluzIT PRO a revolutionary health and home assessment platform for healthcare professionals and IncluzIT HOME, a free aging and home safety planning tool for the public. With research being conducted through the University of Manitoba and the Centre for Technology Adoption for Aging in the North, these evidence-based solutions are designed to improve outcomes for older adults and people with disabilities in Canada. Incluzia's technology innovations won AGE-WELL's 2024 National Impact Challenge!

## **Is a movement-tracking video game (Bootle Blast) feasible for people living with dementia and their caregivers at home?** *Erica Dove, University of Toronto, and Karen Cotnam, Testing Partner*

**Background:** Exercise can target poor balance and concerns about falling of people with dementia, which relate to falls. Existing programs lack engagement and accessibility for people with dementia. Bootle Blast, a movement-tracking video game co-designed with youth experiencing musculoskeletal disability, includes games targeting balance. Preliminary testing by people with dementia suggests the games may apply to them. This study is testing Bootle Blast's feasibility for people with dementia by examining usability, acceptability, safety, and enjoyment.

**Methods:** Ten pairs of people with dementia and their family caregivers will play Bootle Blast at home for two weeks. Before the intervention, participants will complete measures targeting cognition, concerns about falling, and balance. During the intervention, videos will capture skeletal/kinematic data (to profile movement quality) and enjoyment. Participants will be called weekly to check in on their progress. Post-study interviews with pairs will capture their experiences and perceptions of using Bootle Blast at home.

**Results:** One pair is currently using the system, with two scheduled to start next month. Preliminary results will be presented at the conference. Results will profile participants' cognition, balance, movement quality, and concerns about falling. Post-study interviews will provide insight into potential alterations to make to the games.

**Conclusions:** This study will inform design adaptations based on feedback regarding the system's usability, acceptability, safety, and enjoyment for people with dementia at home. The results will inform a future pilot study of Bootle Blast's impacts on balance and fall risk in a larger sample of people with dementia and family.

**CPA Canada.** *Carolyn Goodwin, CPA Canada*

The CPA Canada Financial Literacy program is a national, CPA volunteer-led initiative designed to empower Canadians with the knowledge and tools to make informed financial decisions. Through free workshops, podcast and publications, the program covers key topics like budgeting, debt management, saving, fraud prevention, and financial planning for all life stages. Developed by Chartered Professional Accountants and tailored to diverse audiences—including youth, seniors, newcomers, and small business owners—the program aims to build financial confidence and resilience. With a commitment to accessibility and impact, CPA Canada's Financial Literacy program continues to support Canadians in achieving greater financial well-being and security.

**Developing & Validating a Discrete Event Simulation Tool for Nurse Workload & Patient Care Quality in Complex Continuing Care Settings.** *James Hanratty, Toronto Metropolitan University, and Veroneike Buntin / Gabriella Golea, University Health Network*

For decades, high nurse workload levels have globally impacted nurses, patients, and healthcare systems. This has led to physical injury, burnout, turnover, deteriorated care quality, and increased costs. To date, there are limited quantitative decision-support tools available to healthcare leaders for nurse workload and patient care quality. Computer simulation such as discrete event simulation offers a newer approach to quantifying nurse workload and patient care quality. However, complex continuing care which features some of the most vulnerable patient

populations is under-represented in the nurse workload simulation literature. This study develops and validates a simulation decision-support tool to assess nurse workload and care quality within a complex continuing care setting that can support the design and management of eldercare systems, along with exploring its operational uptake. A discrete event simulation tool was developed using a multi-method approach including institutional data, focus groups, surveys, job shadowing, and a time-and-motion study to collect tool inputs. The tool was then validated using several tests ensuring the tool outputs were accurate and representative of the study unit. This decision-support tool provides several nurse workload and patient care quality indicators informing healthcare leaders of the current state of their unit and enabling them to impact test different policy or design-based future states. This facilitates quantifiable improvements in patient care quality and nurse workload. Future work encompasses policy and work design experiments to help inform decision-making, workload management, and patient care quality improvement on the partner unit.

**Machine learning to detect motor agitation in people with dementia using real-time location data.**

*Zain Hasan, University of Toronto, and Adrienne McMahon, Harbourstone Enhanced Care - Shannex Rlc Limited*

Motor agitation is a clinically important neuropsychiatric symptom of dementia that signals distress and poses a safety risk. In this presentation, our clinical stakeholder will speak to the challenges in assessing motor agitation and the opportunity to improve the detection and monitoring of this symptom using data from an existing safety system (a real-time location and nurse call system) in a long-term care setting. We will then present our research with 47 older adult participants with dementia in a psychogeriatric unit. We collected shift-by-shift staff-rated motor agitation scores alongside location data from a real-time safety system. We then developed machine learning models that successfully distinguished motor agitation from normal motor activities, achieving an area under the receiver operating characteristic curve of 0.81, with the best model using a combination of both location-based metrics and clinical information. Trajectory-based features emerged as the most important predictors in our explainability analysis. An exploratory analysis determined that in instances where the model incorrectly detected motor agitation, staff ratings were either conflicting with qualitative observations noted (79% of incorrect predictions) or borderline motor agitation was reported (63%). Our findings suggest behavioral analytics derived from location data provide valuable information for clinical assessment of neuropsychiatric symptoms in dementia. Our stakeholders will then speak to the opportunities and challenges in the use of digital phenotypes for motor agitation to support data-driven, personalized care and timely, appropriate intervention in dementia care settings.

**StrongerU Senior Fitness.** *Emily Johnson, StrongerU Senior Fitness*

StrongerU Senior Fitness is a globally unique fitness education company that trains staff working in retirement communities, long-term care homes, and other senior-serving roles, to deliver high quality fitness programs. StrongerU elevates the quality of senior fitness globally through their online, self-paced senior fitness instructor

courses and monthly class content for recreation and fitness professionals to learn and teach to their groups.

**Co-Design of a Nurse-Led Digital Care Model to Support Breast Cancer Survivorship and Healthy Aging.** Jenna Keeble, University Health Network, and Shauna Krajacich, Patient Partner/Rethink Breast Cancer

Breast cancer (BCa) is the most diagnosed cancer among Canadian women, with 83% of cases occurring in women over the age of 50. Every year, as patients transition from BCa treatment to survivorship care, they commonly experience physical side effects, emotional uncertainty, and a fear of recurrence. Debilitating symptoms can disrupt daily life and lower overall well-being, contributing to high rates of early treatment continuation. Overwhelmed by recent a 13% rise in caseload volumes and resource constraints, current healthcare services are often fragmented and offer limited support. To address this gap in holistic survivorship care, we will present our ongoing work on co-designing Canada's first nurse-led digital program. Together with people receiving BCa survivorship care, their caregivers, and healthcare providers, we aim to improve health service delivery through accessible and equitable technology. This technology will promote healthy living through supporting wellness for aging BCa survivors by providing personalized self-management tools, improved clinical surveillance, and strengthened care team relationships. We are engaging our partners in semi-structured interviews, focus groups, and co-design workshops to capture lived experiences of survivorship care. We are exploring the role of digital literacy and baseline demographic information to understand needs, barriers, aspirations, and opportunities for intervention. We will present this work-in-progress including a preliminary service design and product concepts to iteratively inform prototype and technical product development. This work aims to disrupt and compassionately embolden how BCa survivors manage their survivorship journey, while building capacity through technology adoption in the breast cancer survivorship space.

**PATH - Program to Accelerate Technologies for Homecare.** Ali Barzegar Khanghah, KITE-UHN, and Farhad Keramati, SmartONE Solutions Inc.

The Program to Accelerate Technologies for Homecare (PATH) is a national platform that empowers researchers, clinicians, and developers to deploy and validate home health technologies in real-world environments. Built on years of R&D, PATH integrates diverse sensors, from wearables and smart textiles to cameras and radar, within a unified, cloud-connected ecosystem driven by AI.

In its next phase, PATH is expanding through partnerships with four living labs and residential homes across Canada, including facilities supported by SmartONE. This initiative will advance real-time Activity of Daily Living (ADL) monitoring and fall detection, a critical need given that falls are the second leading cause of injury-related deaths in seniors. The platform's multi-modal data fusion will reduce false alarms by combining insights from vision, radar, and smart home sensors.

PATH's upcoming deployments will feature real-time data visualizations to enhance transparency, improve debugging, and support co-design with older adults. These visualizations will allow researchers and developers to monitor data streams across modalities as they are collected, ensuring continuous quality assurance and fostering rapid iteration.

PATH will work closely with SmartONE to integrate validated ADL and fall detection models into their existing smart home infrastructure. This collaboration will support real-world deployment in both senior residences and broader rental communities, enabling broader access to PATH's capabilities and facilitating commercial scalability.

**Co-Designing Personalized Reminder Systems with Anomaly Detection.** Joy Lai, University of Toronto, and David Black, Research Collaborator and Caregiver

This presentation focuses on the critical need for co-design in developing digital systems for individuals living with dementia (PLwD) and highlights the importance of projects that integrate anomaly detection into digital reminder systems. Caring for PLwD presents significant challenges due to cognitive impairments that disrupt routines and increase dependence on caregivers. While digital reminder systems have been beneficial in helping manage tasks such as medication adherence and daily activities, they often fail to detect behavioral anomalies that may indicate cognitive decline or hazardous situations.

Current systems are primarily task-oriented and do not address the nuances of individual behavior, leaving a key gap in dementia care. To address this, the presentation will explore how co-design—collaborating closely with caregivers and PLwD—can enhance the development of more personalized and responsive systems. This collaborative

approach is essential to understanding the real needs and preferences of those affected by dementia, ensuring that the technologies developed are not only effective but also usable and acceptable.

By incorporating anomaly detection into these systems, the project aims to detect behavioral changes and improve the overall well-being of PLwD while also alleviating caregiver stress. The presentation will highlight the potential benefits of such an integration, including more accurate systems that adapt to individual patterns through transfer learning and caregiver feedback loops. Ultimately, this project highlights how a co-designed approach can lead to more effective and supportive technology for both PLwD and their caregivers.

**Managing Cognitive Impairment at Work: What We Learn from Supporting, Experiencing, and Witnessing It.** *AnneMarie Levy, Wilfrid Laurier University, and Ryan Thomson, Lethbridge County*

This session explores how organizations can foster cognitively inclusive employment by examining the complex and evolving role of managers through three distinct perspectives: (1) managers who are supporting employees with mild cognitive impairment (MCI) or young-onset dementia (YOD); (2) managers who are themselves experiencing MCI; and (3) coworkers or peers who informally step into managerial roles to support colleagues with cognitive impairments. Drawing on findings from an AGE-WELL-funded study involving 97 interviews across two large Canadian organizations, we illustrate how empathy, trust, organizational structure, and access to resources influence the success of accommodation efforts. We also examine the dual role of technology—both digital (e.g., accessibility software, scheduling tools, workflow apps) and non-digital (e.g., job redesign, visual prompts, flexible hours)—as either enablers or barriers to effective support, depending on how well they align with workplace practices and cultures.

**Steadiwear.** *Emile Maamary, Steadiwear*

Steadiwear Inc. is a Toronto-based medical device company pioneering stabilization technology for individuals suffering from Essential Tremor and Parkinson's disease. Their flagship product, the Steadi-Three, is a battery-free, lightweight glove that utilizes a proprietary magnetic system to counteract tremors, providing immediate and effective stabilization.

Emile Maamary, Co-Founder and Chief Marketing Officer (CMO), leads the company's marketing and operational strategies, leveraging his MBA and extensive experience in omni-channel sales. His efforts drive physician partnerships and global market expansion.

**Using Design Thinking to Build Augmented Reality Tools for Effective Balance Training for Older Adults.** *Noorain Mamdani, McMaster University, and Dr. Manuela Kunz, National Research Council Canada*

Falls are the leading cause of injury among older adults, and consistent balance training is proven to improve balance and reduce falls. However, technology-based solutions designed for older adults are often developed without involving the target population, leading to age-related inequalities and increased abandonment of technologies. We are developing an augmented reality (AR)-based balance training system designed for older adults through a co-creation process involving older adults and healthcare professionals. This tool aims to improve balance to reduce falls, while improving engagement and accessibility. Our approach includes older adults and healthcare professionals throughout the development process to ensure the technology aligns with user preferences and meets the needs of real-world older adults. Using the five-step design thinking framework - empathize, define, ideate, prototype, and test, we aim to shape future iterations of the AR tool based on feedback from the target population. The first three steps of the framework will be facilitated through focus groups and standardized questionnaires to assess usability. The fourth step, prototype, will refine the technology to align with user feedback collected during the study. Our presentation objectives are to highlight the importance and value of co-creation when developing digital health technologies, demonstrate how the design thinking framework can guide the development of novel health technologies, and to discuss the impact of direct feedback from end-users on the adoption of new tools. Therefore, by focusing on co-creation through the design thinking framework, our study aims to reduce falls among older adults by creating an accessible and effective AR-based balance training tool.

**taskIt: An Interface Design Inspired by an Employment Challenge.** *Shieda Marashi, University of Waterloo, and Rochelle Michaude, Co-Designer*

People with mild cognitive impairment (MCI) or early-onset dementia (EOD) often face significant barriers to continued employment, despite retaining many of their capabilities. In this presentation, we share the process and insights behind *taskIt*, a novel task-documentation and communication tool co-designed to support the specific needs of employees with MCI/EOD. Our design journey began with in-depth interviews with 11 individuals living with MCI or EOD and their partners. By reconstructing their work environments and exploring their day-to-day activities, we gained a nuanced understanding of the cognitive, emotional, and practical challenges they face in the workplace. Through an iterative co-process, we synthesized key findings related to memory lapses, information overload, difficulties in task-switching, and breakdowns in communication. These insights guided the co-design of *taskIt*, an interface tailored to enhance task visibility, support personal strategy-building, and facilitate confidence in collaborative work settings. We will walk the audience through our approach to narrowing a wide range of user-generated ideas into actionable design goals and features—such as simplified visual cues and accessible documentation tools. This presentation highlights how empathic research methods and inclusive design practices can be combined to create meaningful tools that extend the working lives and autonomy of people with cognitive impairments. We invite researchers, designers, and stakeholders in assistive technology and user experience research to consider the implications of our work and explore the possibilities for human-centered interface design.

**From print to audio: Adapting to audiobooks after vision loss.** *Signe Lund Mathiesen, Baycrest Health Sciences, Judith Lawrence, Vision Loss Advisor*

Narrative engagement is essential for cognitive and emotional well-being, yet vision loss presents challenges in accessing printed narratives. Audiobooks offer an alternative, but transitioning from reading to listening involves cognitive, emotional, and practical adaptations. This presentation, co-led by a researcher and a collaborator with vision loss, explores this transition through research insights and lived experiences. We begin with the research perspective, discussing why narratives matter and what we know about narrative engagement. Next, we shift to a personal journey, exploring how narrative engagement changes after vision loss from a lived experience perspective. This section highlights how experiencing the evolution of audiobooks and listening devices, from cassette tapes to high-end audiobook productions, intersects with the reality of vision loss and shifts the relationship to narratives: from the grief and frustration of losing access to printed books to newfound social connections through shared listening. Finally, we turn to future directions, considering what researchers, audiobook providers, and accessibility advocates can learn from personal narratives like these. We discuss why some are reluctant to transition to audio, the role of audiobooks in social participation and connection, and the need to expand beyond audiobooks to consider a broader scope of audio-based engagement, for instance, in theatre, on TV and other forms of storytelling. This co-presentation integrates research driven insights with lived experience, advocating for more inclusive and user-centred approaches that empower individuals with vision loss to remain engaged with narratives.

**Exploring Ways to Make the Virtual Emergency Department More Accessible to Older Adults.** *Marina Motsenok and Mary Dimeo, Sunnybrook Health Sciences Centre*

The COVID-19 pandemic accelerated virtual care models of care, including Virtual Emergency departments (EDs). Since 2020, a Virtual ED has been operating out of Sunnybrook Health Sciences Centre, which allows patients with urgent but non-life-threatening issues to book same-day video appointments via Zoom. This service aims to reduce wait times, improve patient experience, and reach underserved populations while decreasing unnecessary in-person ED visits. In-person EDs are currently experiencing unprecedented levels of patient volumes, and older adults represent 20-40% of these visits. While the Virtual ED may serve as a viable option for older adults, they may face barriers accessing it due to low levels of digital literacy or cognitive and sensory impairments. Identifying ways to improve uptake of Virtual EDs may serve to optimize older adult care while relieving existing pressures experienced by overcrowded EDs. The objective of the present study is to better understand how the Virtual ED can meet the health needs of older adults and to develop strategies to raise awareness and uptake. To achieve this goal, our team is undertaking: 1) qualitative interviews with older adult patients, family members, and clinical staff to learn how older adults are accessing the Virtual ED and about their care experiences; and 2) a retrospective chart review of the Virtual ED utilization by older adults. We share preliminary findings from this work, which will serve to inform the development of strategies for improving access to the Virtual ED by older adults.

**Aminro Inc.** *Charlene Nadalin, Aminro Inc.*

Aminro Inc., founded by Charlene Nadalin, is dedicated to empowering families by fostering strong, supportive communities through innovative digital platforms. Our flagship platforms, Aminro Friends and Aminro Family, offer tailored resources and personalized solutions to meet the unique needs of users at every stage of life. With a focus

on health, well-being, and meaningful connections, Amintro provides tools to help families thrive, stay connected, and reach their full potential. Through our mobile apps, we ensure families have the support they need to live well and remain whole, no matter the challenges they face.

**Ethical considerations in implementing Virtual Reality programs in long-term care settings: Case studies from in Canada and the Czech Republic.** *Haopu (Lily) Ren, University of British Columbia, and Jim Mann, Patient Partner and Co-Lead*

**Background:** Virtual Reality (VR) presents opportunities for improving the quality of life of older adults living in long-term care (LTC) homes. While current research primarily examines the feasibility of VR implementation, there remains a lack of studies addressing the ethical considerations pertinent to older adults residing in care settings.

**Method:** Drawing upon case studies from LTC settings in Canada and the Czech Republic, this paper compares common challenges and unique ethical issues associated with VR implementation. We employ a human rights-based approach to discuss lessons learned in the two countries and implications for further research and development of VR interventions for LTC residents.

**Results:** Our reflection focuses on lessons learnt: 1) LTC residents have restricted access to benefits from VR in LTC, 2) risk aversion culture in LTC, 3) involvement of LTC residents in VR development and adoption, 4) cultural relevance, 5) ageism and exclusion, and 6) respecting the right to decline VR. The reflection underscores the importance of engaging relevant partners (residents, families, care partners, leadership teams, industrial partners, and researchers) to develop implementation plans and create collective ownership of VR programs.

**Conclusion:** Continuous team reflections on the design process, technology uptake, and implementation are crucial in ensuring residents' well-being, equity, and cultural sensitivity in adopting technology in LTC. Informed by the reflection, we developed six practical strategies focusing on Access, Balance, Connection, Diversity, Engagement and Freedom to say no, acronymized as ABCDEF. Future research should explore system support, policies, and guidelines to support the ethical use of VR in LTC.

**Supporting Mobility and Independence in Older Adults: A Wearable-Driven Solution for Neighborhood-Specific Challenges.** *Ghanim Saqib, University of Alberta, and Maren Bolstler, GEF Seniors Housing*

Outdoor mobility is a critical factor influencing the quality of life for older adults. However, frequent encounters with stressors in built environments, such as steep stairs, uneven sidewalks, or complex traffic signage, reduce their mobility self-efficacy (MSE), ultimately impairing their ability to navigate urban spaces independently. While substantial research has focused on enhancing general MSE, limited attention has been given to neighborhood-specific MSE, which directly correlates with older adults' likelihood of engaging in outdoor activities. This study explores the potential of wearable based urban crowdsensing to enhance older adults' neighborhood-specific MSE by leveraging physiological and geolocation data to identify neighborhood stressors. An age-friendly mobile application, SafeCommute, was developed to provide older adults with visual previews of stressors and practical navigation tips, empowering them to anticipate and address challenges in their neighborhoods. A nine-week randomized controlled trial was conducted with 16 older adults, divided into an intervention group using the app and a control group receiving standard mobility support. Changes in Neighborhood-specific MSE and Mobility Intention levels were assessed pre- and post-intervention using mixed-model ANOVA. The results demonstrated significant improvements in the intervention group, with Neighborhood-specific MSE increasing by 21% compared to minimal changes in the control group. The significant group-by-time interaction for neighborhood-specific MSE [ $F(1, 14) = 13.264, p < 0.01, \eta^2 = 0.487$ ] highlights the intervention's targeted impact. These findings highlight the potential of wearable-based urban crowdsensing to address neighborhood-specific stressors and improve older adults' confidence in navigating their environments.

**Speech and Eye-Movement Analysis for the Remote Early Detection of Cognitive Decline.** *Sina Shafiqyan, Bruyère Health Research Institute, and Gale Griffith, Expert by Experience (EBE)*

Early detection of cognitive decline is essential for timely intervention in neurodegenerative diseases such as Alzheimer's disease. Speech and eye-movement biomarkers could indicate cognitive changes before they are detectable through conventional clinical assessment. This project, a collaboration between Bruyère Health Research Institute, the National Research Council, and Carleton University, is developing a non-invasive, cost-effective system

that collects and analyzes speech and eye-tracking data that could be used for early detection of cognitive decline. Since March 2024, thirty participants (15 cognitively impaired and 15 healthy controls) have been participating in the study, completing standardized cognitive testing from the Uniform Data Set 3 (UDS3) along with the computerized eye tracking and speech assessment system every six months. This assessment includes tasks such as visual and verbal (story) recall, reading aloud, picture description, and saccade. Speech is captured via a computer microphone and eye movements are recorded using both Tobii eye tracker and a webcam. Key features such as saccade velocity, fixation duration, and linguistic complexity are analyzed to detect possible signs of cognitive changes. This prototype of a computerized assessment is being evaluated for accuracy and usability. This system aims to provide an accessible, robust diagnostic tool that runs on standard computers with high-quality cameras, enabling early detection of cognitive decline. Preliminary results will be presented at the conference, providing insights into the potential feasibility of this approach for detecting early signs of cognitive decline.

**WeTraq Inc.** *Ishaan Singla, WeTraq Inc.*

At WeTraq, we're dedicated to enhancing safety and independence for older adults and those with cognitive impairments. Our discreet Smart Insole provides location safety and activity monitoring, connected to a smartphone app with coverage across North America and Europe. As the Founder, I focus on understanding the unique challenges of this demographics, ensuring we create solutions that truly meet their needs. Collaborating with senior care organizations and industry partners, we've gained invaluable insights to design a user-friendly product. Our journey continues as we validate the solution with research institutes, working towards delivering technology that supports autonomy and improves quality of life.

**Towards a Better Approach for Evaluating the Comfort, Dignity, and Safety of Transfer Technologies Through Integrated Knowledge Translation.** *Nathalie Todamnguepnang, University of Ottawa, and Gale Ramsden, study participant*

The concepts of comfort, dignity and safety are considered essential when using technology to move older adults from one place to another in their environment, for example from a bed to a wheelchair. Depending on the context, healthcare professionals may use different technologies such as ceiling lifts, standing lifts, sliding sheets, sliding boards to move patients. Some technologies are perceived to provide more comfort, dignity and safety than others. However, perceptions of comfort, dignity and safety vary between individuals, making these concepts difficult to assess and operationalise. Furthermore, the literature shows a lack of clear definition of these concepts in the context of patient transfer. The diversity of patient and healthcare professionals' perceptions accounts for the conceptual complexity of the concepts of comfort, dignity and safety, which appear difficult to operationalise and assess, yet are presented as essential elements of the lived experience of patients and carers. This study aims to clarify how these three concepts are understood and to identify a better approach to operationalising them. To achieve the study objectives, an integrated knowledge translation approach using individual interviews with residents and focus group discussions with health care professionals will be conducted in two seniors' health centres and long-term care facilities in Ottawa. It is expected that the results of this study will guide the development of a tool/method that could operationalise the three concepts under study; to help health care professionals to pay particular attention to factors that could promote greater comfort, dignity and safety during transfers.

**NovaSense.** *Justin Wyss, NovaSense*

NovaSense Technology Ltd. is advancing intelligent sensing solutions to support aging populations and individuals at risk of pressure injuries. Its flagship product, the Smart Sheet, is a soft, flexible, and stretchable AI-driven sensor system that continuously monitors pressure and shear forces, providing real-time feedback for proactive prevention. By integrating advanced materials and data-driven analytics, NovaSense aims to enhance independent living and long-term health outcomes. Justin K. M. Wyss, Founder and CEO, leads the company's research, development, and commercialization efforts, leveraging his expertise in electrical and biomedical engineering to bridge cutting-edge technology with real-world healthcare challenges in aging and mobility.

**Welbi.** *Nigel Vanderlinden, Welbi*

Welbi's Resident Engagement AI Platform helps your team deliver personalized senior living experiences at scale – improving resident satisfaction, occupancy rates, and length of stay. Nigel Vanderlinden is Welbi's VP of Sales. He is a results-driven sales leader with a passion for innovation in the senior living industry. As a key leader at Welbi, he focuses on driving growth, fostering strategic partnerships, and enhancing resident engagement through technology.

With a strong background in operations and business development, Nigel is dedicated to improving the quality of life for older adults by empowering senior living communities with Welbi.

