MIRA and Labarge

Annual Report | 2024

McMaster University | Institute for Research on Aging | Labarge Centre for Mobility in Aging | MIRA | Dixon Hall Centre | Labarge Optimal Aging Initiative

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Message from our scientific director

As we reflect on the past year, I am filled with pride and gratitude for the remarkable achievements and growth we continue to experience at the McMaster Institute for Research on Aging (MIRA). MIRA thrives on the dedication of our members, staff and stakeholders, and through interdisciplinary collaborations, community engagement and unwavering commitment to advancing the science of aging. This year has been marked by significant achievements for our Institute. It is with great pleasure that I share our accomplishments with you.

Through our work, the life-space of the Institute is richer, more innovative and interconnected than ever before. In 2024 we made significant strides in research excellence, supported aging research training at all levels, engaged in partnerships across fields and mobilized findings directly to the communities we serve. Our holistic approach ensures that MIRA's impact is felt locally and globally.

In 2024, MIRA launched several new projects, including two Major Programs of Research exploring digital inclusion and care transitions, and partnered with the Michael G. DeGroote Institute for Pain Research and Care (IPRC) to develop a program of research in Aging and Pain. MIRA is grateful for an additional donation from Suzanne Labarge to advancing research in brain aging.

Our trainees and early career researchers are playing key roles in McMaster's aging research landscape, through participating in research projects, workshops and events. In the past year, the Labarge Centre for Mobility in Aging's (LCMA) Catalyst Grants were all awarded to early career researchers, and our suite of trainee funding is fostering the next generation of aging researchers.

MIRA remains a trailblazer in community engaged research through its work at MIRA | Dixon Hall, and through wide-ranging outreach activities and events welcoming and including older adults at every step of our research process. From Older Adult Open Campus Day to Sage Conversations, MIRA invites the community to campus to engage in and explore McMaster's aging research landscape. MIRA | Dixon Hall's Knowledge Synthesis Grants have fostered collaboration and co-design with Dixon Hall clients addressing the multifaceted needs of older adults through multidisciplinary perspectives.

In the upcoming pages, you will discover how MIRA's endeavors in research, trainee development and community engagement deepen our impact and broaden our reach, ensuring that our work continues to exceed expectations for how aging research can influence positive change in the daily lives of older adults.

We extend our heartfelt gratitude to Suzanne Labarge for her steadfast support of MIRA and our dedicated members. Your encouragement to pursue innovative ideas has been instrumental in shaping a brighter future for aging research.

With warmest regards,

Dr. Parminder Raina
Scientific Director, McMaster Institute for Research on Aging
Scientific Director, Labarge Centre for Mobility in Aging
Raymond and Margaret Labarge Chair in Research and Knowledge Application for Optimal Aging

Introduction

Message from Marla Beauchamp,
Director of the MIRA | Dixon Hall Centre

I am pleased to report that 2024 was a year of remarkable growth and achievement for the MIRA | Dixon Hall Centre. Our partnership with Dixon Hall has never been stronger, and together, we are making significant progress in advancing impact-driven aging research that responds to the needs of our community.

Community engagement is at the heart of everything we do. We work collaboratively with clients to understand their needs and build on their strengths. Supporting research that addresses aging from multidisciplinary perspectives, we're able to tackle complex issues with comprehensive solutions that address the multifaceted needs of older adults. Collaboration and feedback guide our initiatives, ensuring our work is not only relevant but also makes a meaningful difference for equity-deserving older adults. **We learn from each other.**

New projects with great potential for impact were launched at Dixon Hall in the past year. In 2024, projects supported by the **MIRA | Dixon Hall Knowledge Synthesis Grants** began connecting and collaborating with Dixon Hall clients. Exploring digital literacy to address loneliness and social isolation and social housing through aging, these projects have begun the co-creation process with Dixon Hall community members.

The groundwork to bring the **Healthcare Professional at Clinic (HCP@clinic)** program to clients at the Centre began this year, in partnership with Toronto Seniors Housing and dovetailing tightly with Dixon Hall's work. By facilitating regular health assessments, education, and support to older adults living in social housing, this initiative—recently awarded **$40,000 from HealthCare Excellence Canada**—is in the process of conducting a needs assessment with our community to inform roll-out of the innovative HCP@clinic model at Dixon Hall.

Major Programs of Research have continued to make strides at the Centre: **MacM3 data collection** at Dixon Hall began in March 2023, and by June 2024, had successfully recruited 344 participants. The **EMBOLDEN trial team** has developed critical relationships and partnerships with the community and their co-designed intervention was launched in two Dixon Hall neighbourhoods, furthering their mission to enhance physical and community mobility for older adults. The study team is grateful for the enthusiasm of Dixon Hall clients and staff; their ongoing commitment is reflected in excellent participant retention to date.

Our commitment to community outreach and building capacity remains strong. MIRA | Dixon Hall coordinated several well-attended **Snacks & Science events**, mobilizing knowledge and inviting experts to present on topics including Social Isolation and Loneliness, Movement through Aging, and Exercise & Brain Health. In May, the **Tech for Life** fair connected older adults with aging research projects on tech-based solutions, featuring interactive presentations, technology support and community-building activities guided by trainees from the Faculty of Engineering. Delivering immediate and actionable impact, the newly outfitted **Technology Lounge** has been instrumental in improving life skills around technology use, fostering necessary access, support and socialization opportunities. This year, we were also proud to welcome **Dr. Ritu Sadana, Head of Ageing and Health with the World Health Organization** to Dixon Hall to tour the facilities and learn about the vital work connecting research on aging with community service providers.

As the Centre evolves and grows, our commitment to incorporating community engagement in research positions us as an important player on the global stage of optimal aging research grounded in the needs and priorities of a diverse community and informed by best available research evidence.

Thank you for being a part of this incredible journey.

Marla Beauchamp
Director, MIRA | Dixon Hall Centre

MIRA's approach

MIRA works to optimize the health and quality of life of Canada's aging population through leading-edge research, education, stakeholder collaboration and knowledge mobilization— while upholding the values of integrity, excellence, collaboration, inclusion and transparency. Through our approach, MIRA's research outcomes have real impact and influence on the well-being of older adults locally and globally.

MIRA positions McMaster as an international powerhouse in aging research by supporting an integrated, engaged and excited aging research community.

Interdisciplinary Research
MIRA connects diverse perspectives and areas of expertise to form research questions that reflect the real, multifaceted way that people age. By bringing together researchers and knowledge users from different disciplines, we encourage fresh approaches to complex aging issues and produce impactful results for real-world aging.

Training
MIRA amplifies our impact by supporting an engaged network of aging research trainees. By funding groundbreaking research across faculties, building capacity, and fostering connections and collaboration at all levels, we empower the next generation of aging research leaders to deepen and extend the future reach of our work.

Community Engagement
Community engagement is central to MIRA's mission. We actively and intentionally involve the community throughout the research process. By co-creating and co-designing research with end-users, we ensure our work addresses real needs and produces timely, relevant, and impactful results.

Knowledge Mobilization
MIRA's endeavors reflect the needs of knowledge users, and we ensure our research findings are effectively communicated and applied. This maximizes the impact of our work in programs, policies, and social innovation to improve aging outcomes. By making research accessible and maximizing its utility, we optimize the aging process for everyone.

Partnerships
Partnerships with key stakeholders are a cornerstone of MIRA's approach, and in 2024 we were proud to work with over 24 partners and collaborators across the academic, research, social, non-profit, industry and clinical spheres. These partnerships expand our capacity, broaden our reach, deepen our impact and strengthen our connections at McMaster, locally in Hamilton and Toronto, across Canada and internationally. These valued partnerships will be highlighted throughout this report with a full list available on page 79.

Aging reimagined through focused research centres

Much of MIRA's support to research flows through our two focused research centres — the Labarge Centre for Mobility in Aging (LCMA) and the MIRA | Dixon Hall Centre. At these centres, diverse research skillsets, critical resources and the insights of knowledge users crystalize as bold research. In 2024, MIRA announced two exciting new research initiatives exploring Aging and the Brain and Aging and Pain.

McMaster Institute for Research on Aging (MIRA)
MIRA is a pan-University, interdisciplinary Institute dedicated to fostering collaboration among researchers and stakeholders in aging. Our goal is to develop, implement, and evaluate impactful research that improves the lives of older adults, optimizing the longevity of Canada's aging population through research, education, and collaboration.

McMaster University Institute for Research on Aging

MIRA | Dixon Hall Centre
Connecting community-based client care and innovative research programs centering equity-deserving older adults. Formed in partnership with Dixon Hall, a multi-service agency in Toronto's downtown East focused on addressing poverty, social injustices, and isolation across the lifespan.

DIXON HALL

Labarge Centre for Mobility in Aging
Facilitating and amplifying interdisciplinary, impact- driven research approaches to all aspects of mobility in aging, including biological, behavioural, technological and environmental approaches to individual and community mobility.

McMaster University Labarge Centre for Mobility in Aging

Collaborative initiatives with other McMaster research centres and institutes

Michael G. DeGroote INSTITUTE FOR PAIN RESEARCH AND CARE

The Aging & Pain Research Initiative

The Aging Brain Research Initiative

By the Numbers

MIRA is comprised of 197 members from all 6 McMaster Faculties

Business	16
Engineering	34
Health Sciences	90
Humanities	8
Sciences	31
Social Science	18
External	1
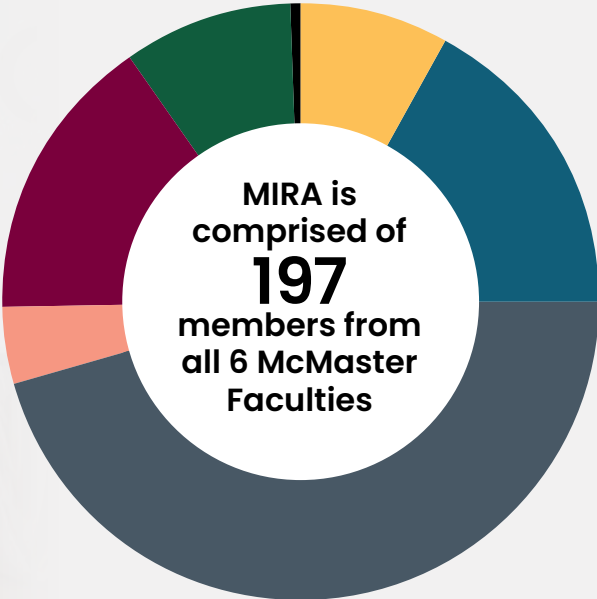
MIRA members represent

Anaesthesia | Anthropology | Biochemistry & Biomedical Sciences | Biology | Chemical Engineering | Chemistry & Chemical Biology | Civil Engineering | Communication Studies & Media Arts | Computing & Software | Earth, Environment & Society | Economics | Electrical and Computer Engineering | Engineering Physics | Engineering Technology | Family Medicine | Finance and Business Economics | Geography & Earth Sciences | Global Peace and Social Justice | Health Policy & Management | Health Research Methods, Evidence & Impact | Health, Aging & Society | Human Resources & Management | Information Systems | Interdisciplinary Science | Kinesiology | Linguistics & Languages |Materials Science & Engineering | Mathematics & Statistics | Mechanical Engineering | Medicine | Geriatric Medicine | Medicine, Division of Respirology | Nursing | Obstetrics and Gynecology | Oncology | Operations Management | Pathology and Molecular Medicine | Pediatrics | Physics and Astronomy | Psychiatry & Behavioural Neurosciences | Psychology, Neuroscience & Behaviour | Rehabilitation Science | Religious Studies | School of the Arts | Social Work | Strategic Management | Surgery

McMaster Departments & Schools

In 2024, MIRA welcomed 18 new members representing every McMaster Faculty.

2022	6
2023	6
2024	12

Supporting the future of aging research at McMaster
34 of MIRA's members are **early-career researchers (ECRs)**. In 2024, we welcomed 12 new ECR members, doubling recruitment from previous years.

> *I was attracted to MIRA's uniquely holistic and interdisciplinary focus on health, well-being, and longevity of older adults. It is key to better understand the physical, cognitive, and environmental aspects of growing older.*
>
> *I'm also really enjoying being part of a scientific community with such diverse skills and experience– there's this creative energy here that attracted me."*

Cansu Ekmehcioglu, DeGroote School of Business
Catalyst Grant recipient and new MIRA member

Investing in aging research

leveraging partnerships to increase our reach and impact

In 2024, MIRA worked with partners to invest over in aging research and training at McMaster $3.7M	MIRA/LCMA INVESTMENT including Catalyst Grants, Major Programs of Research, Scholarships and Fellowships	PARTNER CONTRIBUTIONS including matched funding, co-funded grants and scholarships	
TRAINEE FUNDING	**$313,500** in MIRA/LCMA support for trainees	**$214,600** in co-funding and matched cash support for trainees	**$518,100** total support for trainees
RESEARCH GRANTS	**$2,660,000** in MIRA/LCMA support for research grants	**$558,600** in MIRA/LCMA support for research grants	**$3,218,600** in total support for research grants

MIRA researchers & trainees attracted nearly $18M in external funding in 2024:

MIRA- & LCMA-funded projects raised **$7,007,693** in funding to support, expand and communicate their research, leveraging the initial investment from MIRA (**$2,277,374**) and LCMA (**$4,730,319**).

An additional **$10,837,959** in external funds were reported awarded to MIRA researchers in 2024, to support aging research and training across the University.

$47.5M Since 2016, the Labarge Optimal Aging Initiative, LCMA, MIRA and MIRA | Dixon Hall funded projects and initiatives have collectively raised an additional $47.5M from internal and external sources to support aging research at McMaster.

MIRA PRIORITY AREAS

Mobility & Physical Activity	Age-Tech	Healthy Aging Across the Lifespan	Community Engagement	Pain & Aging	Aging Brain	Infection & Immunity

PARTNERSHIPS AND INITIATIVES

Mobility & Physical Activity

EMBOLDEN — Getting Out for Health

UNIVERSITY OF BIRMINGHAM

McMaster University — Labarge Centre for Mobility in Aging

19 Trainees
38 Catalyst grants
4 Major Programs of Research
Supported by LCMA

Age-Tech

MacM3 — Mobility and Aging Research

Bridging the Digital Divide — EMPOWrD

envisAGE — NextGen AGE-WELL

AGEWELL

12 Trainees
5 Research grants
co-funded with AGE-WELL

Healthy Aging Across the Lifespan

MIRA-iGeN

PACIFIC — Post-Acute Care Intervention for Frailty using Information and Communication technology

MIRA | Juravinski Early Mobilisation Protocol Project

2 MPRs
3 Trainees

Community Engagement

Voice

Hamilton Public Library — FREEDOM TO DISCOVER

HCOA — Hamilton Council on Aging

MIRA and its researchers are building relationships and facilitating community engagement

Pain & Aging

MIRA | IPRC Aging and Pain Research Program

Michael G. DeGroote INSTITUTE FOR PAIN RESEARCH AND CARE

2 Trainees
5 Catalyst grants
co-funded with IPRC

Aging Brain

MIRA | Aging Brain Research Program

Weston Family Foundation

10 Trainees
8 Research grants

Infection & Immunity

The Firestone Institute for Respiratory Health

St. Joseph's Healthcare Hamilton / McMaster University

McMaster University

Michael G. DeGroote Institute for Infectious Disease Research

Global Nexus

1 PhD student
1 Catalyst grants
co-funded with Global Nexus

CROSS-CUTTING INFRASTRUCTURE & PROGRAMS

DIXON HALL

clsa élcv — Canadian Longitudinal Study on Aging / Étude longitudinale canadienne sur le vieillissement
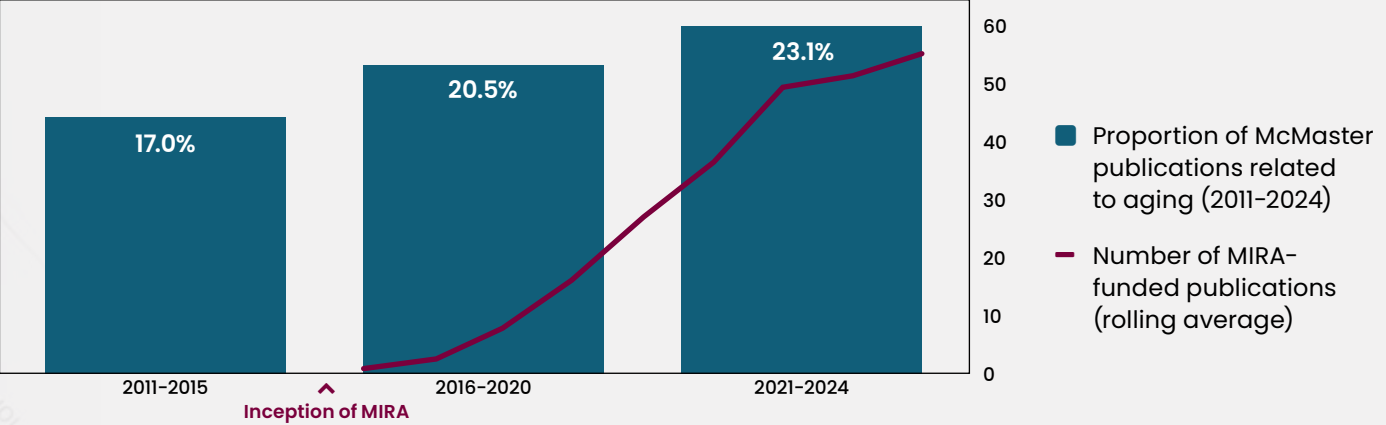
McMaster University

McMaster OPTIMAL AGING PORTAL — mcmasteroptimalaging.org

MIRA's Impact
building research infrastructure across strategic priorities

MIRA's Impact
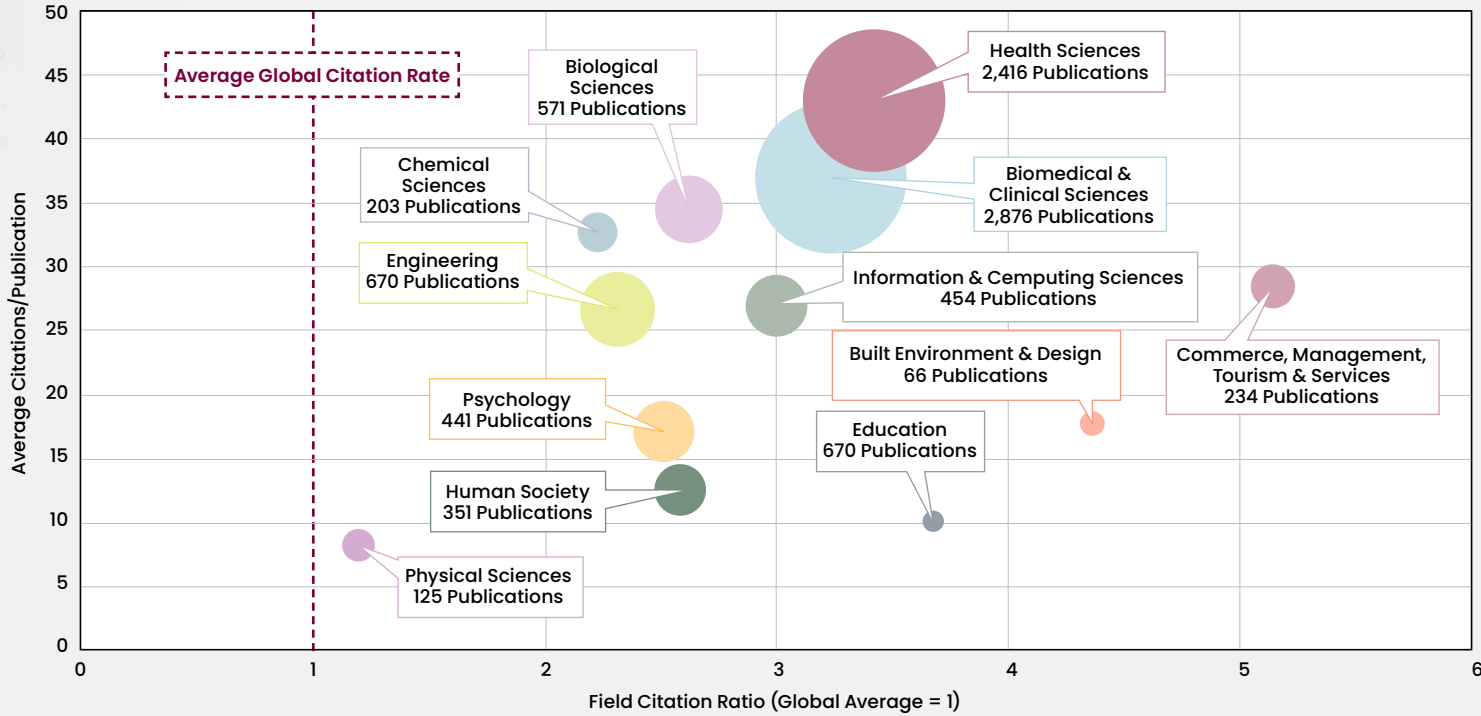## on research locally and globally

Aging publications at McMaster

Since the inception of MIRA in 2016, **the proportion of McMaster's publications that focus on aging has steadily increased to 23%,** and the number of publications supported by MIRA funding has shown continuous improvement.

- 17.0% (2011–2015)
- 20.5% (2016–2020)
- 23.1% (2021–2024)

Inception of MIRA

- Proportion of McMaster publications related to aging (2011–2024)
- Number of MIRA-funded publications (rolling average)

MIRA member field citation rate

MIRA researchers **are cited more than average across Faculties and fields**.

Average Global Citation Rate

- Biological Sciences — 571 Publications
- Health Sciences — 2,416 Publications
- Chemical Sciences — 203 Publications
- Biomedical & Clinical Sciences — 2,876 Publications
- Engineering — 670 Publications
- Information & Computing Sciences — 454 Publications
- Built Environment & Design — 66 Publications
- Commerce, Management, Tourism & Services — 234 Publications
- Psychology — 441 Publications
- Education — 670 Publications
- Human Society — 351 Publications
- Physical Sciences — 125 Publications

Y-axis: Average Citations/Publication
X-axis: Field Citation Ratio (Global Average = 1)

Engagement

Communications

MIRA's communications strategy connects our network of stakeholders, including researchers, trainees, policy-makers partners and older adult end-users. By sharing the important stories of the Institute, we strengthen connections in our aging research community and deepen the impact of our work.
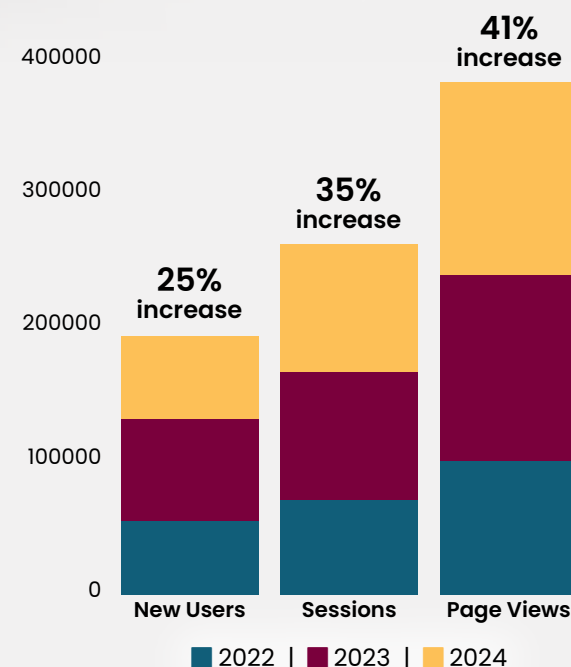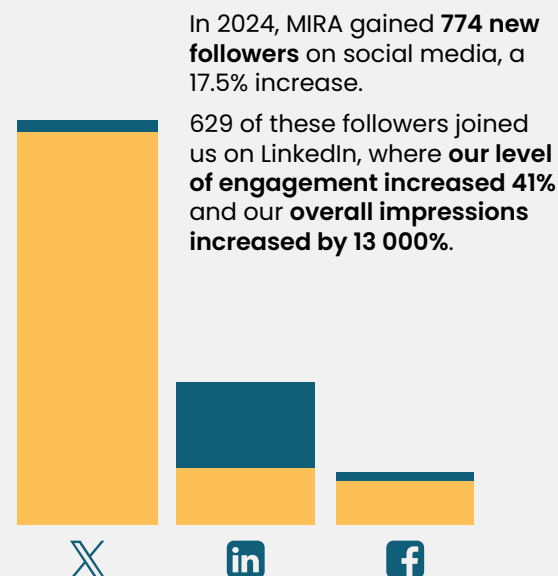
Website

Following its re-launch in October 2023, MIRA's website saw **a significant increase in user engagement and satisfaction and welcomed over 60K new users**. This transformation has established our online presence as a cohesive, user-centric platform, serving as a central repository for institutional information and stories.

25% increase

35% increase

41% increase

400000		
300000		
200000		
100000		
0		
New Users	Sessions	Page Views

■ 2022 ▏■ 2023 ▏■ 2024

Social Media

Over the past year, MIRA leveraged our social media platforms to increase awareness of aging-related research, celebrate the work of our community, and drive engagement with the Institute from all stakeholders. MIRA's reach and impact across audiences is strengthened by a social media following of over 4000 people that continues to grow, year over year.

In 2024, MIRA gained **774 new followers** on social media, a 17.5% increase.

629 of these followers joined us on LinkedIn, where **our level of engagement increased 41%** and our **overall impressions increased by 13 000%.**

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Newsletters

In January 2024, MIRA implemented a complete overhaul of our monthly newsletters, transferring to a visual format using MailChimp. Through our newsletters, **we reach over 1500 members of the aging research community**.

MIRA Update

The **MIRA Update**, sent to our members and select partners, reaches 290 Faculty members with MIRA success stories, funding announcements, event listings, and aging research resources. A trusted and dependable one-stop source for aging research news, the Update boasts an open rate that significantly exceeds comparative campaigns of similar audience size and demographic on both open and click rate.

MIRA Community Update

MIRA's **Community Newsletter** has seen a 66% increase in following since the newsletter revamp in January 2024. 344 new engaged, committed community members and older adults joined an audience of 1064 receiving robust, evidence-based resources and invitations to engage with aging research every month. This number has grown steadily with each month.

Media Coverage

MIRA plays a crucial role in mobilizing knowledge and connecting research findings with the public through various media channels. By making our work accessible, engaging, and relevant, we ensure that our research reaches people where they are, using diverse platforms to effectively communicate our findings. Below is a small sampling of the many ways MIRA researchers connected with the public in 2024.

Print

- **Marla Beauchamp** was quoted by the **Washington Post** on the importance of resistance training through aging.
- **Anthony Levinson** spoke to the **CBC** about tips for reducing risk of dementia.
- **Alexandra Mayhew** was interviewed by **The Hamilton Spectator** for her award-winning work developing age-specific performance charts to improve identification of low physical function in mid-to-late-life older adults, enabling early interventions that preserve mobility and function.

Online research and health publications

- **Stu Phillips** wrote an op-ed on the importance of resistance training through aging, and **Matthew Lees** wrote on the vital role of muscle in successful aging for **The Conversation**.
- **Gina Agarwal** and the CP@Clinic were featured in **Partyline**, the online magazine of Australian Rural Health about the expansion of the initiative to Australia.
- **Andrea Gonzalez** was featured on how to assist aging parents for **The Conversation**.

Radio

- **Kevin Moncion's** research on women and stroke was featured on over **65 news outlets**.
- **Dawn Bowdish** appeared in **16 interviews for Radio 1 Syndication** for National Immunization Awareness Week, and on **CBC Radio** discussing her work on the link between respiratory infection and dementia (which also appeared in print in the Hamilton Spectator).

Podcasts

- **The Waiting Room celebrated its 100th episode**. Co-hosted by **Hsein Seow** this public-facing podcast explores caregiving and palliative care.
- **Maureen MacDonald, Dylan Kobsar** and **Léa Ravensbergen** appeared on the **Moment Mentor Memento Mentor** trainee-focused podcast sharing personal stories of the why behind their research, hosted by McMaster's Faculty of Science.

TV

- **Allison Shea** appeared on **Breakfast Television** discussing menopause in aging women.
- MIRA's project manager **Allison Dubé** was interviewed by **Zoomer media** about the Institute and the importance of community-engaged research.

Snapshots

MIRA engages a robust collaborative network that spans McMaster University and extends globally.

This year's annual report highlights how the growing life-space of the Institute continues to make meaningful impact across academic, community, clinical, policy-making and underserved sectors.

4 major research meetings and showcases

MIRA Knowledge Exchange, International Consensus Meeting on Wearables, Canadian Association for Gerontology Conference and RTO ERO Future of Aging Conference.

17 academic research seminars, workshops, networking and capacity building events

Trainee Talks x 5; Meet Your Supervisor; Scholarship and Grant Writing workshops, IPRC workshops x 2; Alumnus Talk; AURA Research 101 workshop; USRF, PDF, ECR, Pitch Your Project and trainee orientations.
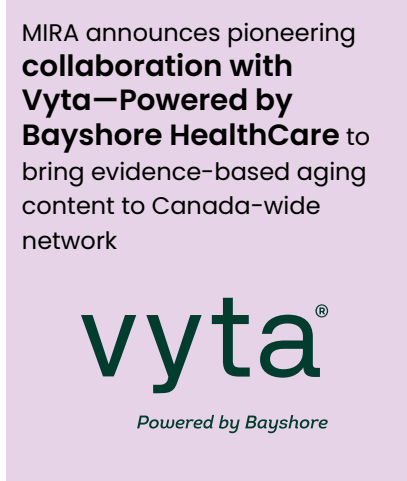
McMaster's aging research community connects at the **2024 MIRA and Labarge Knowledge Exchange**

'We learn from each other': MIRA welcomes the community to McMaster for **Older Adult Open Campus Day**

Snacks & Science at the MIRA | Dixon Hall Centre connects Toronto's downtown east with actionable, accessible MIRA-supported research

MIRA announces pioneering **collaboration with Vyta—Powered by Bayshore HealthCare** to bring evidence-based aging content to Canada-wide network

vyta®
Powered by Bayshore

MIRA welcomes scholars from across the globe for landmark **International Consensus Meeting on Wearables for Measuring Mobility in Aging Populations**

By supporting initiatives and expanding our influence to drive change

MIRA's work is enhancing the aging experience.

Institutionally
McMaster University

Locally in the Greater Hamilton
City of Hamilton

and Toronto area
MIRA | DIXON Hall Centre

Nationally

Globally

Over **$40,000 awarded in MIRA trainee funding** through scholarships and fellowship programs

MIRA Trainee Network's **Pitch Your Project** approaches aging topics three minutes at a time
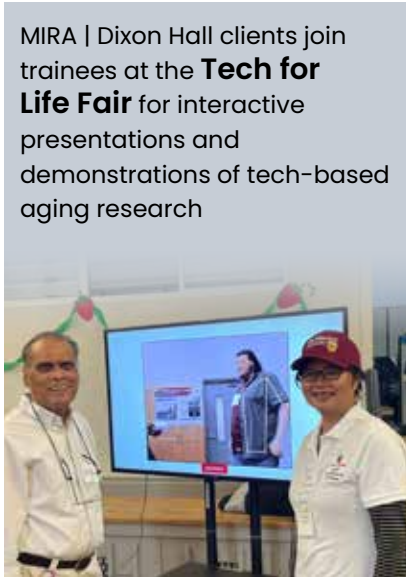
MIRA funds two **new Major Programs of Research** addressing frailty and the digital divide

MIRA's **Bites and Insights series at Hamilton Public Libraries** opens conversations with older adults

Sage Conversations welcomes the community to spaces on-campus and off for exciting events and exclusive presentations

MIRA | Dixon Hall clients join trainees at the **Tech for Life Fair** for interactive presentations and demonstrations of tech-based aging research

MIRA grows the **Voice Canada online platform for community engagement** in research across Canada with university partnerships

Representative from the **World Health Organization (WHO)** visits McMaster and Dixon Hall

World Health Organization

McMaster's **Optimal Aging Portal engages 5.5 million users worldwide** in connecting with accessible, evidence-based aging research and resources

8 major community engagement events

Older Adult Open Campus Day, Bites & Insights x 4, Sage Conversations x 3.

6 major knowledge mobilization events

Snacks & Science x 3 & Tech for Life Fair at MIRA | Dixon Hall, Pitch Your Project, EMBOLDEN Collaborative Conversation.

20 events strengthening partnerships across McMaster and the community

including a visit from a WHO delegate at McMaster and MIRA | Dixon Hall, Senior's community fairs x 8, Optimal Aging Portal presentations x 3, Innovative Matchmaking session on aging, McMaster Community Engaged Research Day, Ontario Age-Friendly Communities conference, National Home Show.

Insights from McMaster Leadership Team

Message from David Farrar

At McMaster University, our commitment to excellence and leadership drives us to address the pressing challenges of our time through innovation, collaboration and ingenuity.

We have been consistently recognized for our dedication to advancing all aspects of health and well-being. In 2024, McMaster ranked 30th in the world and 8th in Canada in the Times Higher Education Impact Rankings, which assess universities against the United Nations' Sustainable Development Goals (SDGs). Even more noteworthy is that McMaster ranked 15th in the world and first in Canada for SDG 3: good health and well-being.

Aging is a primary research priority at McMaster University, and the McMaster Institute for Research on Aging (MIRA) plays a crucial role in solidifying our reputation as an international leader in this field. Through fostering an environment where interdisciplinary research can grow and thrive, MIRA drives McMaster's success in addressing the complex challenges of aging, a testament to the remarkable dedication and expertise of our faculty, staff, and trainees.

Since its establishment, MIRA has exemplified the power of collaborative research, setting a benchmark for other institutes within our university. Through MIRA, McMaster has become a destination for researchers at all stages of their careers to connect, collaborate, drive progress and develop solutions through aging research. This past year has been marked by significant achievements, many of which are detailed in this report.

Our achievements would not have been possible without the generous support of our former chancellor, Suzanne Labarge. Her contributions have enabled the realization of numerous innovative ideas and projects.

I would also like to express my gratitude to the community members who actively engage with our researchers. Your involvement is crucial to our mission of making the world a better place to age.

Thank you for your continued support, and I hope you find this year's report both informative and inspiring.

Dr. David Farrar
President and Vice-Chair, McMaster University

Message from Susan Denburg

At McMaster University, we proudly champion aging research as a cornerstone of our commitment to advancing health and well-being. McMaster is recognized as a leader on the global stage because of staunch commitment, not only to addressing the immediate needs of our communities and policymakers, but also by anticipating and adapting to a changing research landscape.

It has been my great pleasure to witness the remarkable growth and progress of the McMaster Institute for Research on Aging (MIRA) since its inception. MIRA has leveraged expertise and perspectives from across the University to develop dynamic, cohesive teams answering complex questions in aging with innovation and ingenuity.

In 2024, MIRA continued to make strides on the world's stage, connecting researchers from across the globe and positioning McMaster as a prominent voice guiding new research protocols. The MIRA-co-hosted "International Consensus Meeting on Wearables for Measuring Mobility in Aging Populations" brought together scholars from around the world to develop standards for using wearable technology in aging research. These efforts have positioned McMaster University as a leading voice in developing new research protocols addressing critical issues and spearheading meaningful change on both a local and international level.

A focus on development of early-career researchers and trainees means that MIRA's influence will continue to position aging as a core research priority at the University, with unlimited potential for growth and development in the years to come. MIRA's achievements are made possible by the generous and visionary support of Suzanne Labarge, a dedicated advocate for aging research. Thank you, Suzanne.

This report showcases the impactful work achieved through MIRA's collaborative and inclusive approaches over the past year, and I am confident you will find it engaging.

Dr. Susan Denburg
Strategic Advisor to the Dean and Vice-President,
Faculty of Health Sciences and Professor,
Department of Psychiatry and Behavioural Neurosciences

Message from David B. Hogan

As Chair of the MIRA International Scientific Advisory Committee (ISAC), I have the privilege of witnessing firsthand the remarkable advancements MIRA is making in the field of aging research. Alongside my esteemed ISAC colleagues, who are leaders in aging research from around the world, I am continually impressed by the innovative work with international impact being conducted at MIRA.

In late 2023, the ISAC gave positive feedback on two new Major Programs of Research (MPRs) designed to significantly advance our understanding of digital inclusion and aging and the development of solutions for older adults in care transitions. We have been impressed to see the progress made in 2024 by EMPOWrD and PACIFIC, which both leverage advanced research methods and interdisciplinary approaches to enhance the mobility, wellness, and digital inclusion of older adults, while creating robust support systems for those transitioning from hospital to home.

These projects join established MPRs in exploring mobility broadly defined (physically, socially and intergenerationally) that highlight the meaningful work led and supported by the Institute. I look forward to their continued development and the vital space they occupy in MIRA's impressive suite of innovative, impactful and adaptive aging research.

MIRA's importance in the realm of aging research is continually growing, driven by its internal achievements, strategic partnerships, and international collaborations. The ISAC is committed to supporting MIRA as it leads the way in advancing aging research globally. Our Committee looks forward to visiting Hamilton again in 2025.

I appreciate your ongoing support and trust this year's report provides an overview of MIRA's consequential research and inspirational collaborations.

Dr. David B. Hogan
Chair, International Scientific Advisory Committee
McMaster Institute for Research on Aging

ISAC member list

David Hogan
Former Academic Lead, Brenda Strafford Centre on Aging, O'Brien Institute for Public Health, Cumming School of Medicine, University of Calgary

Tom Kirkwood
Professor Emeritus (formerly Associate Dean for Ageing), Institute for Ageing, Newcastle University

Nicola Palmarini
Director, National Innovation Centre for Ageing, Newcastle University

Agneta Malmgren Fänge
Associate Professor, Applied Gerontology, Lund University

Wendy Rogers
Khan Professor of Applied Health Sciences, Kinesiology and Community Health, University of Illinois

Luis Miguel F. Gutierrez Robledo
Founding Director, National Institute of Geriatrics (Mexico)

Research

In 2024, MIRA and its partners provided over **$3.7 million in funding** to support aging research projects.

This included support across all six McMaster Faculties, for trainees through three graduate scholarships, six postdoctoral fellowships, and six undergraduate summer fellowships, as well as for researcher-led projects through two Major Programs of Research, two Dixon Hall Knowledge Synthesis Grants, eight Catalyst Grants led by early-career researchers, one National Research Council Aging in Place grant, and one AGE-WELL HARP grant.

Legend of McMaster Faculties

BUS   DeGroote School of Business
ENG   Faculty of Engineering
FHS   Faculty of Health Sciences
HUM   Faculty of Humanities
SCI   Faculty of Science
SOSCI   Faculty of Social Sciences

NEW Research Initiatives

Charting new paths: The Aging Brain Research Initiative

In 2024, MIRA announced a new Aging Brain Research Initiative, supported by a generous gift of $7.5 million from McMaster University chancellor emerita and alumna Suzanne Labarge. Representing an exciting new research priority area for MIRA, the Aging Brain Research Initiative will leverage existing Labarge-supported projects, platforms and research programs to better understand how the aging brain controls our body functions as we age.

Housed under MIRA's Labarge Centre for Mobility in Aging (LCMA), the Aging Brain Research Initiative will draw on expertise from McMaster and around the world to develop new initiatives aimed at advancing our understanding of successful cognitive aging. These initiatives include research into the relationship between the brain, gut health, and optimal aging; studies on how mobility, physical activity, diet, and loneliness influence brain health; and examinations of how intergenerational family dynamics intersect with mobility and the aging brain.

Addressing the urgent need to support good brain health as we age, the program aims to accelerate resonant, innovative solutions for the one in ten adults over the age of 65 who experience decline in cognitive functions, including memory loss and reduced mobility.

This past year, the Aging Brain Research Program supported it's first trainee research project: **Seyedaydin Jalali** (ENG) received a Labarge Mobility Postdoctoral Fellowship for the project "Dynamic interactions in neurodegeneration and pain: A 3D in vitro model approach." Please see page 47 for more.

MIRA and IPRC partner to develop the next thematic area of research in aging and pain

Dr. Luciana Macedo appointed Academic Lead of **MIRA-IPRC Aging & Pain Program of Research**

"I look forward to leading this initiative, aiming to address complex questions in aging and pain research through deep interdisciplinary partnerships with researchers, clinicians, patients and healthcare administrators."

Michael G. DeGroote
INSTITUTE FOR PAIN RESEARCH AND CARE

Since 2019, MIRA, in partnership with the Micheal G. DeGroote Institute for Pain Research and Care (IPRC) have collaboratively funded interdisciplinary projects researching aging and pain. This year, to support MIRA's emerging research priority area and both Institutes' mutual commitment to advancing innovation in this space, MIRA and IPRC have appointed Dr. **Luciana Macedo** (FHS), as academic lead of the new MIRA-IPRC Aging and Pain Program of Research.

Dr. Macedo will provide consultation and leadership within MIRA and IPRC to support research collaborations and capacity building around aging and pain, working to identify and engage with researchers, stakeholders and external partners to enhance the impact of this collaborative initiative.

"The crucial support from both Institutes fosters an environment where innovation can thrive," notes Dr. Macedo, a physical therapist and Associate Professor in the School of Rehabilitation Science. The inaugural recipient of the MIRA-IPRC Catalyst Grants in Aging and Pain, her research in musculoskeletal pain has led to studies on the impact rehabilitation has on improving back pain, how different treatment strategies work for different patient subgroups, the underlying mechanisms of pain and the implementation of programs of care.

NEW Major Programs of Research

In Spring 2024, MIRA proudly announced the launch of two new Major Programs of Research, committing over $2 million across four years to support interdisciplinary, stakeholder engaged initiatives focused on improving the lives and mobility of older adults.

EMPOWrD – Enhancing Mobility and Participation for Older adult Wellness through Digital inclusion

Improving mobility and wellness among older Canadians by utilizing effective design to bridge divides in access, use and embracement of technology.

EMPOWrD will address the ways technology may not reach and enable all populations equally – and how some older adults are left behind. This gap is deeply widened when lower socioeconomic factors, race, gender and new immigrant status intersect in older adult populations. The EMPOWrD project seeks to enhance mobility and wellness among older Canadians through effective and inclusive technology design.

The team will employ the McMaster Digital Transformation Research Centre (MDTRC) and the new Mobile User Experience Lab (MUXL) vehicle to bring cutting edge research methods to measure behaviour (e.g., eye movements, facial emotion reading), physiological (e.g., electrocardiogram (EKG), electromyography (EMG), galvanic skin response (GSR)), and cognitive (e.g., electroencephalography (EEG)) activities of users engaged in real-time use of digital platforms and technology. The MUXL will enable data collection at older adults' residences and in other community settings, allowing for researchers to reach older adults who often are underrepresented in research.

Driven by researchers from the Faculties of Business, Science, Engineering, Health Sciences, and Social Sciences, EMPOWrD seeks to employ a set of interconnected studies to better understand the ways that older adults experience barriers to access, use, and embracement of technology, and develop methods and best practices for bridging the digital divide to support mobility and wellbeing.

Project Lead: Milena Head
*Information Systems,
DeGroote School of Business*

"We are so grateful for the opportunity to explore facilitators and barriers to accessing and continuing to use technology. There are so many benefits that technology can provide to older adults' wellness and mobility, but the impact is lost when we design technology that is not age-friendly or when they don't reach the people who may need the most support."

In 2024, the EMPOWrD team...
- Collaborated with community partners
- Completed participant recruitment plans
- Initiated co-design workshops for digital literacy training
- Developed and delivered co-design workshops for EMPOWrD team members to assist in project planning

NEXT STEPS: Engage 60-80 older adults in co-design, focusing on dimensions of wellness, and apply for the Natural Sciences and Engineering Research Council (NSERC) Alliance grants.

PACIFIC – A Post-Acute Care Intervention for Frailty using Information and Communication technology

Leveraging state-of-the-art evidence and electronic infrastructure to co-develop a frailty intervention that increases quality of life and reduces the risk of future hospital admissions for older post-acute care patients discharged into the community.

Announced in Spring 2024, **PACIFIC** aims to create a robust and responsive support system for older adults transitioning from hospital to home, leveraging community resources and digital tools to facilitate recovery, prevent decline and return to hospital.

Working with partners and end users, the project aims to co-design a community-based intervention to support people at risk of or living with frailty when they are discharged back to the community. The interdisciplinary team — drawing on McMaster researchers spanning several departments and schools, including Rehabilitation Science, Kinesiology, Health Aging and Society, Medicine, with partners at Hamilton Health Sciences, and the City of Hamilton — aims to address the question, "Can a combined package of treatments and local programs that are known to work based on evidence make life better for older people with frailty who are going home from hospital?"

In 2024, the PACIFIC team...
- Engaged eight trainees to start community asset mapping
- Submitted a protocol paper to BMJ Open Journal
- Worked with Hamilton Integrated Research Ethics Board to create a streamlined ethics approval process
- Systematically reviewed existing frailty measures and older adults use and perception of patient portals
- Consulted with a co-design advisory group on needs assessment

NEXT STEPS: Validate a frailty-assessment tool using Epic data.

Project Lead: Lauren Griffith
*Health Research Methods,
Evidence, and Impact,
Faculty of Health Sciences*

PACIFIC
Post-Acute Care Intervention for
Frailty using Information and
Communication technology

"PACIFIC targets a particularly vulnerable population of older adults who are often being discharged back into the community with insufficient support. This diverse population is not often well represented in research, but our co-design approach amplifies these voices and helps ensure that PACIFIC is as inclusive and accessible as possible to individuals who may be more difficult to reach."

EXISTING Major Programs of Research

MacM3 - McMaster Monitoring My Mobility

Technological approaches for advancing the assessment of early mobility limitation in older Canadians

The McMaster Monitoring My Mobility (MacM3) study is the largest cohort study of its kind, **tracking the everyday mobility and health trajectories of older Canadians**. The study uses wearable activity monitoring devices to measure key outcomes such as life-space mobility, trip frequency, duration, and mode, while assessing sedentary behavior, including body posture and step counts.

An interdisciplinary study composed of researchers from various fields including Rehabilitation Science, Engineering, Computational Statistics, Humanities, Business, and Geography, MacM3 aims to provide valuable insights into late-life mobility decline in Canada. The results of this study aim to reshape approaches to managing mobility in later life and enhance our ability to identify early, pre-clinical changes before they escalate into significant issues; laying the foundation for developing tools and strategies to help older adults and their caregivers self-manage mobility as part of overall health.

Project 1	Project 2	Project 3	Project 4
Conceptualization of early mobility limitation	CLSA data predictors of early mobility decline	Development & validation of wearable technology for mobility tracking	MacM3 prospective cohort study to identify mobility trajectories

Project Lead:
Marla Beauchamp
Rehabilitation Sciences, Faculty of Health Sciences

MacM3
Mobility and Aging Research

Study Lead Marla Beauchamp co-hosted the **International Consensus Meeting on Wearables for Measuring Mobility in Aging Populations** (see page 29). The landmark event was facilitated by members of the MacM3 team

In 2024, the MacM3 team...

- **Reached recruitment goal of 1,500 participants** 65+ consenting to monitor their mobility for at least 2 years using activity monitoring device(s)
  - 1,556 participants consented;
  - 1,506 baseline assessments completed in June 2024;
  - 1,440 participants completed 4-month follow-up in October 2024.
- **Expanded recruitment to the MIRA | Dixon Hall Centre**
  - Recruited 371 participants in Toronto; of those, 323 have completed the 4M follow-up.
- Finalized **publications on machine learning and a cohort profile paper**.
- Presented results at the **Gerontological Society of America Annual Scientific Meeting** in Seattle, Washington.
- Nearly 1.5M in funding was awarded to the next phase of MacM3 research, see page 36.

NEXT STEPS: Processing collected digital mobility data through the NiMBaLwear pipeline, and continuing with participant follow-ups. Generating 24-month feedback reports for participants who have completed the study.

EXISTING Major Programs of Research

EMBOLDEN - Enhancing physical and community MoBility in OLDEr adults with health inequities using commuNity co-design

Promoting physical and community mobility through co-design

EMBOLDEN is a complex community intervention incorporating exercise, nutrition, social participation, and system navigation to improve the mobility of older adults who may experience barriers to engagement in community programs and live in areas with limited resources.

As a Major Program of Research, EMBOLDEN focuses on co-designing programs with older adults and their communities to enhance mobility and health equity. By partnering directly with community and older adult stakeholders in design, the study aims to develop innovative solutions that address the unique challenges faced by older adults in neighborhoods with health disparities.

Preliminary findings note that post-intervention, older adult participants reported increased physical activity, motivation, mobility, and knowledge about exercises and equipment. They also noted improved awareness of healthy eating, better eating habits, enhanced mental health, and reduced social isolation through peer learning and community engagement.
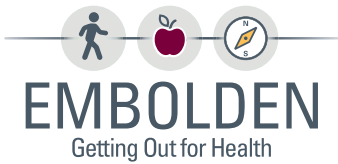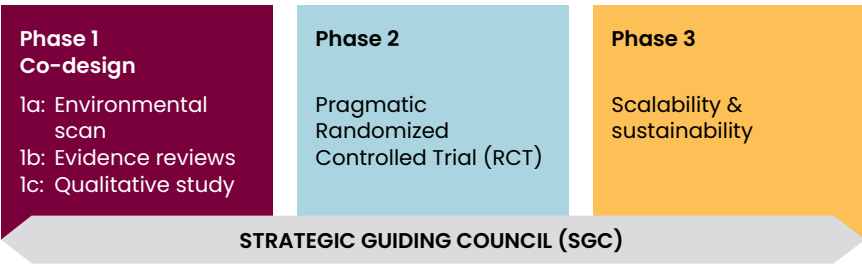
In 2024, the EMBOLDEN team...
- **Enrolled 284 participants** (238 in Hamilton; 46 in Toronto).
- **Completed data collection for four cohorts in Hamilton, completing a full set of eight** (seven neighbourhoods in English, and one city-wide in Mandarin).
- **Completed quantitative and qualitative post-intervention data collection (T2)**.
- **Expanded from Hamilton into Toronto**, targeting communities supported by the MIRA | Dixon Hall Centre.
  - Completed recruitment for the first site (St Lawrence, n=46); intervention is near completion.
  - Recruitment for final study site (St. James Town) is underway.
- Submitted a **pragmatic randomized controlled trial protocol manuscript**.
- Received dual **CIHR Inclusive Research Excellence Prizes** totalling $50,000.
- Developed **key knowledge translation** products to disseminate systematic reviews of system navigation programs and nutrition interventions.
- Presented **at Snacks and Science at MIRA | Dixon Hall** to mobilize knowledge and promote recruitment in key demographics.

NEXT STEPS: Scaling up the initiative within Hamilton and Toronto and adapting and implementing EMBOLDEN within naturally occurring retirement communities (NORCs) in other jurisdictions.

Phase 1 Co-design	Phase 2	Phase 3
1a: Environmental scan	Pragmatic Randomized Controlled Trial (RCT)	Scalability & sustainability
1b: Evidence reviews		
1c: Qualitative study		

STRATEGIC GUIDING COUNCIL (SGC)

Project Lead:
Rebecca Ganann
Nursing,
Faculty of Health Sciences

EMBOLDEN
Getting Out for Health

MIRA-iGeN – Intergenerational Study on Aging

Building a platform for intergenerational research

The MIRA-iGeN study is a groundbreaking intergenerational initiative investigating aging across different generations and how family networks support mobility and healthy aging. Including up to four generations from a single family, this Major Program of Research studies interconnections among factors influencing health across the life course and generations by creating an **intergenerational cohort** that will be followed for at least 10 years

The study aims to identify factors common across generations and their connections to health conditions such as cardiovascular disease, cancer, mental health disorders, diabetes, and dementia. MIRA-iGeN seeks to understand why some individuals develop these diseases while others do not, despite sharing risk factors—building understanding that can shape future interventions, programs, and policy focused on improving health and well-being across the life course. Instrumental in developing personalized prevention strategies and treatments, indings from this study aim to advance research and guide community interventions, contributing to more people enjoying longer, healthier lives.

Project Co-lead:
Andrea Gonzalez
Psychiatry & Behavioural Neurosciences,
Faculty of Health Sciences

Project Co-lead:
Parminder Raina
Health Research Methods, Evidence, and Impact (HEI),
Faculty of Health Sciences

MIRA-iGeN

In 2024, the iGeN team...
- **Recruited 3140 participants** including 2,611 older adult index participants, 416 children, 52 grandchildren, and 61 parents of index participants.
- Achieved a major milestone by **enrolling participants from three generations**.
- Study leads and team members are conducting a Canadian case study through the **WHO Life Course Network identifying iGeN as a novel data source** to answer life course research questions.
- **Built relationships with community organizations** (YWCA, Hamilton Public Libraries, St Matthew's House, Compass Community Health and more) to promote the study to equity-deserving communities.
- Met with representatives from **Hamilton Public Health and the City of Hamilton Senior's Advisory Council** to partner on intergenerational recruitment strategies.
- Expanded the baseline questionnaire (adult and adolescent versions) to include a **climate change module** to develop understanding about how concerns around environmental issues are impacting participants across generations.
- **Hosted an online participation event** for 50+ attendees, presenting an overview of the study and facilitating discussions on why intergenerational research is important and how it can contribute to our understanding of healthy aging.

NEXT STEPS: A 3-year follow-up with participants will begin in early 2025. Planning has begun for **future sub-studies** to be conducted with the cohort, expanding the reach and impact of the data collected.

Dixon Hall Knowledge Synthesis Grants

The promotion and sustainability of digital literacy skills for marginalized older adults

Brian Detlor

Brian Detlor (BUS), Tara La Rose (SOCSCI), Ines Perkovic (Business Librarian at McMaster University)

This project examines, synthesizes, and mobilizes knowledge on promotion and sustainability of digital literacy skills for marginalized older adults, as a means of addressing this population's loneliness, social isolation, and emotional well-being.

Aiming to better understand the factors that impact the successful delivery of digital literacy skills training over time, this project will systematically review scholarly, private, and public sector literature and identify innovative approaches to mobilize this knowledge, including events at Dixon Hall and use of MIRA-supported tools and networks like the Optimal Aging Portal and Voice Canada.

Findings from this project will mobilized to support the launch of effective, sustainable digital literacy solutions that address social isolation, loneliness, and emotional well-being among equity-deserving older adults.

In 2024, MIRA was proud to award two inaugural MIRA | Dixon Hall Knowledge Synthesis Grants, supporting research that directly involves and impacts equity-deserving older adults through projects co-created with the Dixon Hall community.

Valued at $70,000 over one year, Knowledge Synthesis Grants aim to identify knowledge gaps and opportunities for future work related to themes identified as priority areas in consultation with staff, leadership, and other stakeholders from Dixon Hall.

New in 2024
- A **digital literacy consultation** was completed with Dixon Hall Community Advisory Group and Tech Lounge volunteers to develop parameters for literature relevant to Dixon Hall's needs.
- Researchers met with a **focus group of Dixon Hall stakeholders**, asking about barriers and challenges in learning and teaching digital literacy skills for marginalized older adults.
- Began conducting a **scoping review** including identifying the research question and relevant studies, selecting 240 included studies.

In August, Dr. Detlor presented to Dixon Hall stakeholders, emphasizing digital skills as essential—especially for older adults—in an increasingly digital world.

Dixon Hall's rooming house initiative: Scoping the design and implementation of social housing in Ontario to inform priorities and practice

Chi-Ling Joanna Sinn

Chi-Ling Joanna Sinn, (St. Joseph's Health System Centre for Integrated Care), **Andrew Costa**, (FHS & St. Joseph's Health System Centre for Integrated Care), Constance Dupuis, (SOCSCI), Anthea Innes, (SOCSCI), Jim Dunn (SOCSCI)

This project seeks to identify potential directions for the future design, implementation, and evaluation of Dixon Hall's rooming house initiative, which, beginning in 2018, tasked Dixon Hall and partners with the reimagining of 23 rooming houses in Toronto.

The project seeks to identify goals, gaps, and opportunities of the Rooming House Project, perform an extensive literature review from similar populations or housing models and identify how other operators in relevant Ontario jurisdictions operate "rooming houses" to achieve the goals.

By developing valuable parallel context through collaboration with Hamilton's Juravinski Integrated Residential Care Initiative, the project aims to inform and enrich Dixon Hall's vision of creating a more supportive and inclusive living environment for over 200 existing (and future) rooming house tenants while advancing understanding of affordable housing challenges across contexts and communities.

New in 2024
- Completed **strategic planning consultations** including interviews and focus groups with Dixon Hall staff, tenants and partners including the Dixon Hall Community Advisory Group (CAG), prioritising trust and relationship building with stakeholders.
- Performed a **scoping review of academic & grey literature** from similar populations or housing models
- Held a town hall event to **report findings** back to rooming house tenants.

Collaborations forged through this project led to funding from the Juravinski Research Institute, supporting a three-year project to improve equitable access to health and social care for Hamilton's residential care facilities.

principal investigator(s) (bold)

principal investigator(s) (bold)

Catalyst Grants

Promoting optimal aging among migrant returnees

Geraldina Polanco (SOSCI), Catherine, Connelly (BUS) and Rodrigo Narro Perez (SCI)

MIRA Catalyst Grant in Mobility and Aging

Geraldina Polanco

This interdisciplinary, participatory, and action-oriented study seeks to promote improved mobility amongst aging migrant returnees. It expands the scope of a SSHRC-funded study that seeks to feminize knowledge on the plight of Salvadoran returnees.

Collaborating with Salvadoran NGO Instituto Salvadoreño del Migrante (INSAMI), this study will illuminate the experiences of aging returnees through the lens of mobility within spaces and institutions to promote improved aging. Dovetailing with the SSHRC-funded research, this study will employ participatory methods to better understand the plight of aging returnees, and to prioritize solution-oriented, local knowledge dissemination. This includes a peer-developed video for recent aging returnees, and a policy brief and infographic for local stakeholders.

Catalyst Grant funding aims to stimulate new collaborations across McMaster, and position teams to build bigger programs of research. Since MIRA began running the Catalyst Grant program in 2017, many successful initiatives have emerged, bringing external grants and talent to McMaster.

In 2024, Catalyst Grants were awarded to teams led by early-career researchers (ECRs). MIRA worked with the Associate Deans (Research) to identify promising new projects, and supported eight interdisciplinary, one-year projects, including two projects co-funded in cooperation with the **Faculty of Engineering** and the **DeGroote School of Business**.

The effect of short-term ketone supplementation on dual-task performance and indices of brain function in adults with subjective cognitive decline

Jeremy Walsh (SCI), Mike Noseworthy (ENG), Alexandra Papaioannou (FHS) and Dylan Kobsar (SCI)

Labarge Catalyst Grant in Mobility and Aging

Jeremy Walsh

Dementia is a devastating health condition with no cure, and it may develop slowly and without detection. One of the earliest warning signs of dementia is difficulty in multitasking, such as walking and talking simultaneously. This issue is due to the brain's reduced capacity because of an inability to create enough energy to handle two tasks at once.

Ketone drinks may provide a new and exciting pathway to improved mobility and protected cognitive abilities in people who have a higher risk of developing dementia. Research shows that ketone drinks improve the ability of brain cells to create energy, by providing an alternate energy source to sugar. This study will assess the impact of ketone supplementation for 14 days on 60 older adults experiencing multitasking difficulties. Exploring the efficacy of a newly developed ketone drink, this study aims to investigate if this intervention can improve multitasking abilities in addition to improving cognitive functions, including memory and attention.

> This project secured $300,000 for 3 years from Heart and Stroke Foundation of Canada Grant-in-Aid

AI-enhanced flexible transit solutions for aging populations: Improving accessibility, affordability, and quality of service

Hao Yang (ENG), Bruce Newbold (SCI), Kai Huang (BUS) and Lucy El Sherif (HUM)

Labarge Catalyst Grant in Mobility and Aging co-funded with the Faculty of Engineering

Hao Yang

As the aging population in Canada increases, an urgent need for improved transportation solutions is needed. Older adults, particularly women and low-income individuals, face significant challenges in accessing reliable and safe transit systems where existing systems fail to meet their needs due to limited accessibility and flexibility, particularly through information and communication technologies.

The project aims to leverage the real-world traffic state and travel demand information to develop a community-scaled, AI-enhanced, data-driven platform to integrate travel queries and traffic state platforms for transit-like ride-sharing systems. The proposed system will dynamically adapt to demand, providing various levels of shared vehicle (SV) services, from door to-door options to micro-transit solutions.

This project will develop a user-centered data-driven and AI-enhanced on-demand shared mobility system by leveraging the spatial-temporal travel demand variation to enhance the users' quality of service while reducing user cost. The system aims to bridge the gap in the urban transportation system by providing a flexible -route and -schedule platform integrating different levels of services and providing soft guarantees for passenger waiting and travel times through a system of constraints and rewards.

McMaster University | Engineering

Understanding retinal homeostasis during the progression of glaucoma

Aftab Taiyab (FHS), Judith West-Mays (FHS), Heather Sheardown (ENG) and Ryan Wiley (SCI)

MIRA Biology of Aging Catalyst Grant

Aftab Taiyab

Glaucoma is one of the leading causes of blindness and is predicted to affect ~111.8 million people worldwide by 2040 due to the aging population. Elevation in intraocular pressure (IOP) i.e., the pressure generated by the aqueous humor, the liquid that flows between cornea and the lens, is often the key symptom and a major modifiable risk factor of the disease. Elevated IOP exerts pressure posteriorly and damages the retinal ganglion cells (RGCs) leading to blindness. The detailed understanding of the initial trigger and the sequence of events leading to progressive loss of RGC during glaucoma is yet to be completely understood. This is because of the absence of a suitable glaucoma animal model that shows consistent correlation between increased IOP and loss of RGC.
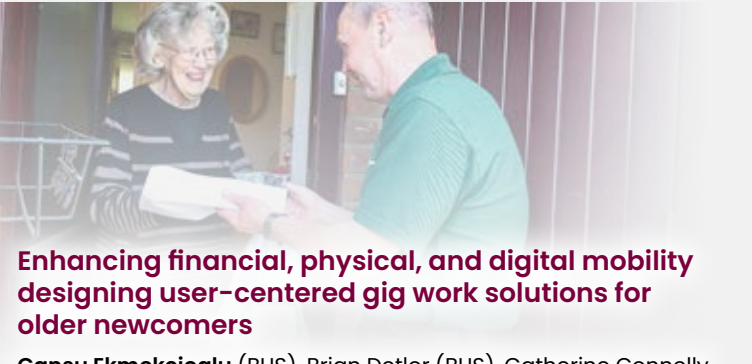
This project has developed a novel open angle glaucoma mouse model that develops progressive glaucomatous features including elevated IOP and retinal damage. This animal model system will be used to understand the molecular events and gene expression changes in retina during the progression of glaucoma. We believe that the results from this new research program will provide us with findings that can be utilized to explore strategies to mitigate retinal degeneration in glaucoma.

Catalyst Grants

Enhancing financial, physical, and digital mobility designing user-centered gig work solutions for older newcomers

Cansu Ekmekcioglu (BUS), Brian Detlor (BUS), Catherine Connelly (BUS), Nicole Dalmer (SOSCI), Irene Yuan (SCI) and Ayza Vardar Collab (Community Advisory)

Labarge Centre for Mobility in Aging Catalyst Grant

Cansu Ekmekcioglu

Platform-mediated gig work (e.g., Uber) is a potential pathway to steadier livelihoods for marginalized workers, including older newcomers. These platforms introduce new complexities and opportunities for mobility among older adults, yet our knowledge on utilization and experience on these platforms remains limited. To address this gap, this project will conduct stakeholder interviews and co-design workshops aiming to understand the mobility enablers and challenges faced by older immigrants in platform-mediated gig work.

This project aims to gain a deeper understanding of the mobility experiences and aspirations of older immigrants in platform-based gig work. Our findings will enhance the efficacy and usability of digital gig-work platforms by improving their clarity, navigation, and user-friendliness, benefiting both end users and other stakeholders. This project will improve older newcomers' access to resources and opportunities for well-being and prosperity by enhancing their financial and physical mobility, leading to better work conditions for older newcomers, increased health and well-being, and improved mobility options among older adults.

Exploring telepresence robots as mobility extensions for older adults

Shane Saunderson (BUS), Denise Geiskkovitch (ENG), Tara La Rose (SOSCI), Nicole Dalmer (SOSCI)

Labarge Centre for Mobility in Aging Catalyst Grant co-funded with the DeGroote School of Business

Shane Saunderson

For many older adults, reduced mobility introduces challenges beyond physical activity. It can result in social isolation and limited access to public spaces, events, and community resources, which can have negative implications on health and wellbeing.

This project will explore the potential of Mobile Telepresence Robots (MTRs) to act as mobility extensions for older adults, helping them improve both social and physical mobility. A mixed-methods approach will allow the qualitative exploration of MTRs as well as quantitative validation of emerging findings. A series of in-person, co-creative group sessions using MTRs as technology probes will be conducted to better understand the mobility limitations of older adults, potential use cases for MTRs, and concerns around MTR use. A follow up survey will allow the testing of hypotheses emerging from these sessions.

This exploratory pilot will enable future studies that investigate the feasibility and desirability of MTRs for a variety of identified use cases and observe the social and interpersonal implications of MTR use. This research has the potential to validate an established, relatively inexpensive technology as a critical mobility extension for older adults.

McMaster University | DeGroote School of Business

Recommending fall prevention resources for aging in place: Designing a conversational agent with older adults and caregivers

Irene Ye Yuan (ENG), Rong Zheng (ENG), Alexandra Papaioannou (FHS), George Ioannidis (FHS), Patricia Hewston (FHS) and Cansu Ekmekcioglu (BUS)

Labarge Centre for Mobility in Aging Catalyst Grant

Irene Ye Yuan

As Canada's population ages, challenges like the risk of falls can prevent older adults from aging in their homes and increase demand for caregivers, but existing programs and technology for fall prevention are often underutilized because of barriers to access.

This project aims to create a user-friendly system that helps older adults find and use fall prevention resources through a conversational agent (CA) that can provide personalized recommendations based on the needs and preferences of older adults through natural interactions. This system will not only recommend high-quality fall prevention resources but also support the involvement of family members and caregivers in the decision-making process. By closely working with older adults and relevant stakeholders throughout the system design process (from ideation, prototyping, to evaluation), we will build a working prototype of this CA-based recommender system for fall preventions resource that aligns with older adults' unique values and needs and better support their aging in place.

This project received a NSERC Discovery Grant totalling $125,000 over five years, and received an additional $12,500 Discovery Launch Supplement.

Mitigating infections in joint replacements to improve mobility in aging

Thomas Wood (FHS), Kathryn Grandfield (ENG) and Jose Moran-Mirabal (SCI)

Labarge Centre for Mobility in Aging Catalyst Grant

Thomas Wood

Periprosthetic joint infection (PJI) is one of the most disastrous complications of total joint arthroplasties (TJA), having social, emotional and mobility-related side-effects. If PJI is contracted, patients must undergo antibiotic therapy and additional surgeries followed by months of severely limited mobility. As the only treatment shown to improve mobility in late-stage osteoarthritis, TJA is common among older adults who are susceptible to infection. Several studies have investigated methods to prevent PJI, including the use of antiseptic irrigation solutions, however, whether these solutions cause unintentional tissue damage that impedes recovery is unclear.

This interdisciplinary study combining the expertise of orthopaedic surgeons, engineers and scientists will develop novel imaging approaches to investigate the effects of surgical antiseptic solutions on human tissue. These results will be communicated to and guide the orthopaedic community on the impacts of irrigation solutions through partners in the Canadian Arthroplasty Society.

Preliminary and fundamental interdisciplinary work for this project will provide supplementary information for the PREVENT-iT trial, which aims to test the effectiveness of irrigation solutions in preventing infections in total joint arthroplasty (TJA) through randomized control groups.

PREVENT-iT | THE HAMILTON ARTHROPLASTY GROUP | THE HAMILTON ARTHROPLASTY GROUP

Pioneering consensus: MIRA and global experts shape the future of measuring mobility

Wearable devices, such as fitness trackers and smartwatches, have the potential to revolutionize our understanding of the aging process by providing valuable insights into older adults' health and well-being through movement data.

In late November, the McMaster Institute for Research on Aging (MIRA) hosted the **'International Consensus Meeting on Wearables for Measuring Mobility in Aging Populations,'** in Burlington, Ontario. This landmark event gathered international scholars to develop standards to guide the use of wearable technology in research of aging populations, and to produce an international consensus statement covering critical metrics for evaluating late-life mobility with wearables and optimal methods for data collection and analysis of mobility data in older populations.

Cementing MIRA and McMaster as leaders in this field, Dr. **Marla Beauchamp** hosted the event with University of Birmingham's Afroditi Stathi. Welcoming experts from the UK, Germany, Ireland, Australia, Spain, Israel, the US, and Canada, the two-day meeting hosted researchers from institutions like CIHR-IMHA, Johns Hopkins Bloomberg School of Public Health, and Barcelona Institute for Global Health.

Accurate, real-time movement measurement in aging populations can significantly help manage mobility as a "6th vital sign." However, rapid technological advancements require international cohesion on data usage. The event facilitated expert knowledge exchange and collaboration to create an internationally applicable consensus document, aiming to ensure research findings are reliable and comparable across studies and populations.

Consensus facilitators Eric Lockhart (Queens University) and Julie Richardson (McMaster University) expertly guided the participants through a modified nominal group approach, to reach consensus on:

1. Minimum standards for measuring mobility with wearable technology in aging populations, and

2. Identifying critical knowledge gaps and research priorities.

Facilitated by a team from MIRA's Major Program of Research Mac M3, participants engaged in discussions and breakout groups, exploring how wearable technology can be used in older populations, including critical measures to characterize mobility subdomains and best practices for using wearable technologies

This work has significant implications for measuring mobility, a critical component of healthy aging, across global research and public health platforms. "The insights and connections gained from this meeting will play a crucial role in shaping the next generation of wearable technologies and their applications in aging populations," emphasizes Dr. Beauchamp, who is also an Associate Professor in the School of Rehabilitation Science in addition to her role as Director of the MIRA | Dixon Hall Centre. "As the population continues to age, leveraging advanced technologies to help monitor the health and functional ability of aging populations around the globe is an urgent priority."

The International Consensus Meeting on Wearables for Measuring Mobility in Aging Populations strengthened international ties and paved the way for future research. Participants are now drafting a manuscript and preparing to disseminate the findings to the international research community.

The international consensus statement from this event marks a significant global collaboration to enhance older adults' quality of life through innovative technology. This meeting deepened the shared research focus of McMaster and the University of Birmingham, building on connections from the "A Tale of Two Cities" project funded by the BIRMAC Project and Ideas Fund. Supported by the UK ATTAIN Network, this initiative is part of ongoing research collaborations to understand how built environment, cultural, and societal factors impact mobility and aging.

MIRA's vision of a global community of researchers dedicated to improving the health and mobility of older adults, paired with the Institute's experience in organizing, facilitating, and connecting expert perspectives, uniquely positions it as a valued thought-leader on the international research stage. This international consensus meeting marks the beginning of important work to improve the health and mobility of older adults living in Canada and abroad. MIRA's influence is shaping the future of mobility research and improving the health and quality of life for aging populations worldwide.

> *"There is a strong focus on using wearable technology to measure mobility in aging populations. MIRA is taking a leadership position along with our international partners to reach consensus on a set of validated metrics for all domains of mobility."*
>
> **Parminder Raina**, *Scientific Director of the McMaster Institute for Research on Aging*

2024 Research Highlights

Nearly $1.5M in funding awarded to the next phase of MacM3 research

$925,649 in funding was awarded through **Canadian Institutes of Health Research Project Grant**, joining $250K in co-funding by LCMA and AGE-WELL through the **Healthy Aging Research Program (HARP)** to projects building on existing technology developed through MIRA's Major Program of Research Mac M3.

Supporting an exciting new phase of the MacM3, this research incorporates GPS-enriched wearable technology with other movement sensors to monitor mobility in older adults. Aiming to develop an open-source data processing pipeline and personalized behavioural feedback reports for a cohort of over 1500 participants, this work will incorporate accurate and real-time measurement, providing a valuable data repository for future research and collaboration.

The research, led by **Marla Beauchamp** (FHS), connects experts from McMaster and University of Waterloo, many of whom were integral facilitators of the **International Consensus Meeting on Wearables for Measuring Mobility in Aging Populations**, which was supported through a UK Ageing Network Global Partnership award of $50,000 awarded to Afroditi Stathi of the University of Birmingham.

This research was further supported in 2024 by two major grants from the Canadian Institutes of Health Research (CIHR) and the Institute of Musculoskeletal Health and Arthritis (IMHA), worth 100K each.

MIRA's impact heard all over the word

Ian Bruce (ENG) whose Healthy Aging Canada Catalyst Grant was co-funded by MIRA, AGE-WELL and Canadian Frailty Network, brought his exciting research on assistive listening technology for live music to the community in 2024 – sharing research stories with older adults at MIRA's Bites & Insights at Hamilton's Central Public Library and at Sage Conversations, presented to a sold-out crowd at McMaster's LIVELab, a first-of-its-kind sound laboratory.

Dr. Bruce's research explores novel assistive listening technologies to optimize the live music experience for those with hearing loss. Working across sectors through partnerships with the Hamilton Philharmonic Orchestra, Hamilton Place concert venue, and hearing aid manufacturer Sonova, this work studies sound quality, naturalness, sound processing, and the efficacy of sound picked up by hearing aid microphones, with an aim to develop best practices for venues across Canada and around the world. This work has the potential to significantly enhance the lives of older adults in their fields, with age-related hearing loss, which is linked to cognitive decline and reduced social engagement, connectedness and wellbeing. It exemplifies how aging-related technology research can be effectively conducted and shared with the public in real time, positioning MIRA as a trusted source for impactful aging solutions.

Gregory Steinberg (FHS) and **Lehana Thabane** (FHS) were both named to the 2024 list of Highly Cited Researchers by analytics firm Clarivate. This prestigious recognition honours individuals whose work has had a significant impact in their fields, with **publications ranking in the top 1%** by citations over the past decade.

Aaron Jones (FHS) has been appointed the **Schlegel Chair in Clinical Epidemiology and Aging** and was awarded **$300,000 in CIHR funding** for research on primary care for older adults with functional impairment. Additionally, he received a **$196,923 New Investigator Grant from the Alzheimer Society Research Program** for work in emergency care for people living with dementia.

Lauren Griffith (FHS), lead investigator of MIRA MPR PACIFIC, was appointed to the **Canadian Institutes of Health Research Institute of Aging Advisory Board.**

Milena Head (BUS), lead investigator of MIRA's MPR EMPOWrD, was honoured for the fourth consecutive year with the **Dr. S. J. Basu Teaching Award**, a student-voted award for professors or instructors teaching in the MBA program.

Alexandra Papaioannou (FHS) featured in the **2024 Report to Parliament on Canada's National Dementia Strategy, supported by the Centre for Aging + Brain Health Innovation (CABHI).** Key initiatives highlighted include the Dementia Foundations, which has trained 1,182 unregulated healthcare providers to improve dementia care, and MIRA-supported GeriMedRisk, a virtual service that has supported 14,400 healthcare professionals and 5,000 older adults by optimizing medication management.

Crossing the blood brain barrier from USRF to major funding

MIRA members **Margaret Fahnestock** (FHS) and **Maikel Rheinstadter** (SCI) lead a project exploring delivering therapeutics across the blood-brain barrier that has been awarded **$300K in funding from the Weston Brain Institute**.

This research, related to a publication-producing **2019 MIRA USRF project** by **Kate Zhou**, developing an innovative drug delivery system that uses empty red blood cells to transport large compounds across the blood brain barrier, addressing a major challenge of treating Alzheimer's disease (AD). If successful, this project will confirm the potential of red blood cells as an effective drug delivery system, paving the way for further development of this approach for AD and other neurodegenerative diseases of aging.

Dawn Bowdish (FHS) leveraged her 2022 MIRA Biology of Aging Catalyst Grant, receiving a **Alzheimer's Society & Brain Canada grant for $100K.** She also received a **CIHR Brain Aging for $750,000** to continue work on a MIRA-funded project awarded to Sofya Ermolina for work on chronic inflammation and respiratory infections in brain aging.

"Our research aims to provide a better method for getting drugs into the brain, which will make it easier to treat neurodegenerative diseases of aging.

This funding will allow us to optimize and test our delivery system and to determine whether that improves memory in an Alzheimer's disease mouse model."

Margaret Fahnestock, PhD & Maikel Rheinstadter, PhD
McMaster University

Bruce Newbold (SCI) and **Manaf Zargoush** (BUS) have leveraged LCMA funding into a **$189,719 SSHRC Insight Grant** researching data-driven insights into older adult migration and mobility.

MIRA trainee research paves way for $990K CIHR grant in cardiovascular and malaria study

MIRA member **Giuseppe Melacini** (SCI) leads a team that has been awarded a **CIHR grant for $990, 675 over five years** for a project "Structural Basis of PKG-Targeting Therapies and Aberrant cGMP Signaling."

This study investigates how a protein called protein kinase G (PKG) can bind to messenger molecule called cyclic guanosine monophosphate (cGMP). Defective signalling by this molecule can lead to high blood pressure, retinal degeneration, aneurysms and is involved in the lifecycle of the malaria parasite. This work uses NMR spectroscopy to understand PKG's structure and behavior in both humans and the malaria parasite.

This project emerged directly from work by MIRA trainee **Mariia Khämina** (SCI)'s **2021 MIRA Master's Scholarship** project "Understanding how aging affects blood pressure through oxidative stress," which was supervised by Dr. Melacini. This research investigated a key regulator of blood pressure – cyclic guanosine monophosphate (cGMP)-dependent protein kinase 1 α (PKGIα) to determine how oxidation changes the structure and function of PKGIα.

This MIRA-funded research will accelerate the development and clinical use of promising drugs for retinal degeneration, cardiovascular diseases (affecting 25% of Canadians), and malaria (a threat to 40% of the global population). This research aims to develop more effective and selective drugs with fewer side effects for these conditions.
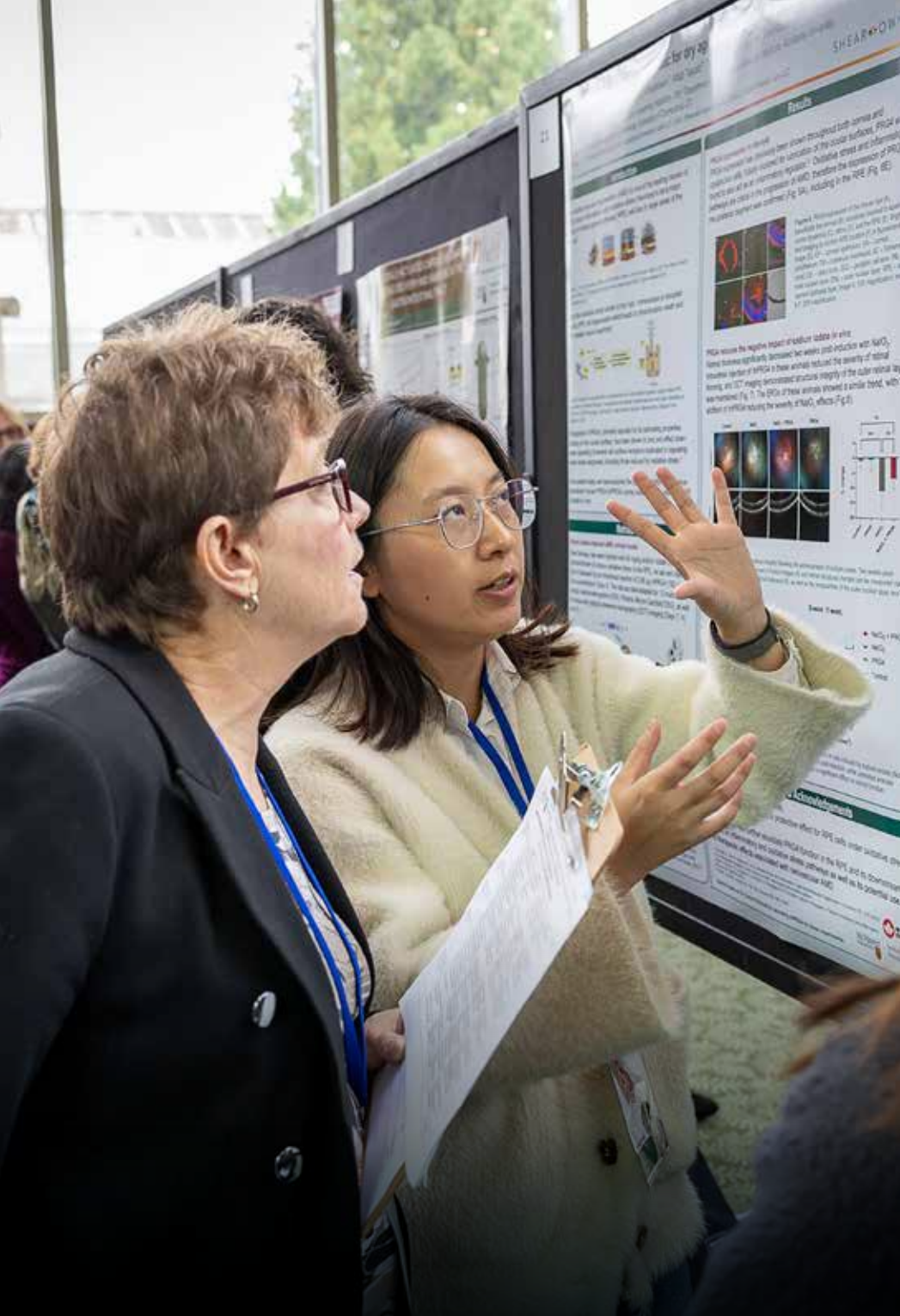
Training

MIRA maximizes our impact by fostering a connected network of engaged and enthusiastic aging research trainees. Through **trainee funding**, **capacity-building** activities, **networking** opportunities, and ongoing **communication and support**, MIRA empowers trainees of all levels to develop interdisciplinary perspectives and professional skills while producing world-class aging research projects.
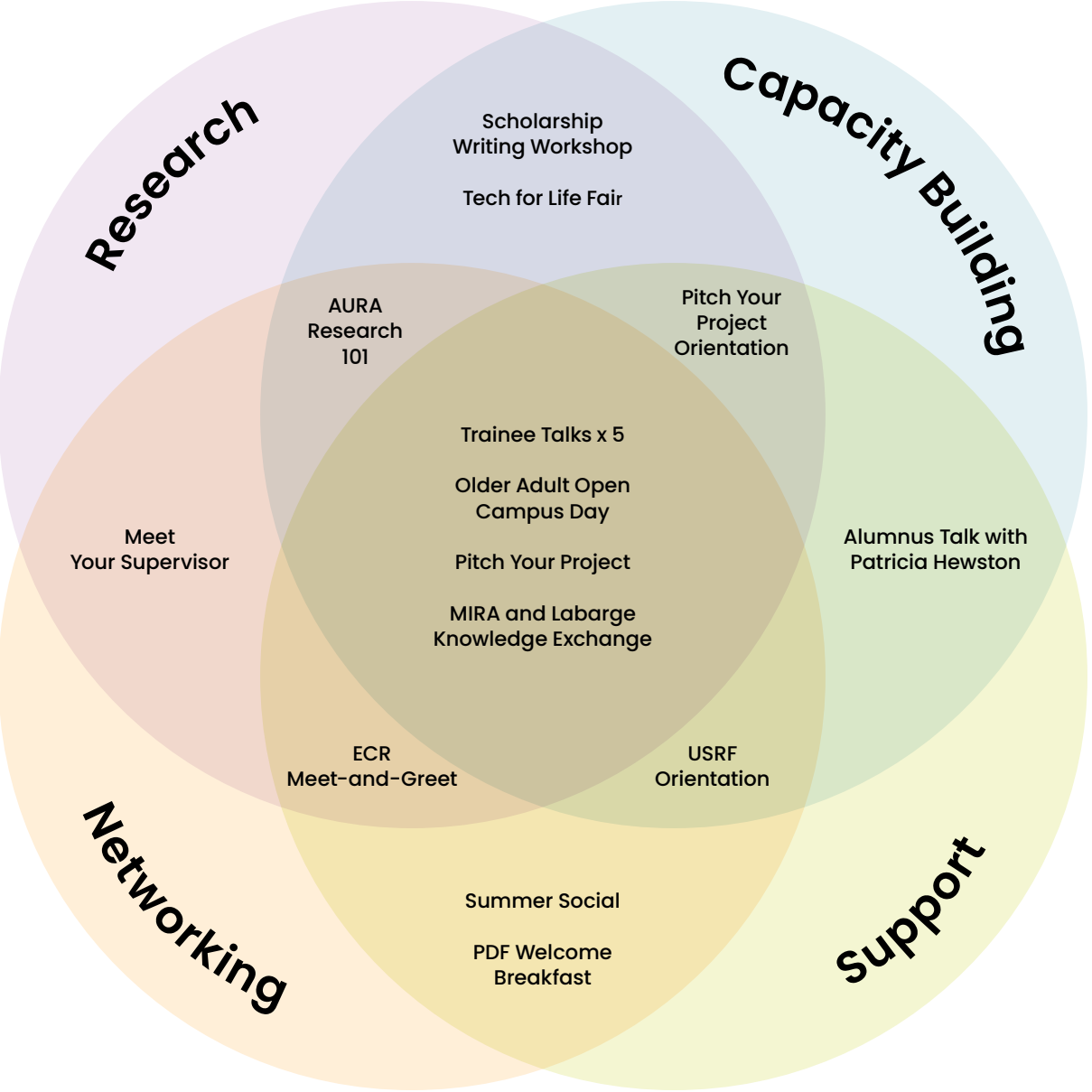
The **MIRA Trainee Network** connects trainees from all six McMaster Faculties, fostering interdisciplinary exchange and networking. It invites trainees to discuss aging research challenges, gain diverse perspectives, explore career opportunities, and participate in capacity-building events. Through this network, MIRA establishes itself as the premier support for trainee aging research at McMaster by promoting collaboration, offering diverse growth opportunities, and advancing the next generation of impactful researchers.

The Trainee Network membership is reviewed annually and updated to reflect graduating cohorts.
In 2024, the MIRA Trainee Network consisted of 144 engaged trainees of all levels.

Level	Count
Undergraduate	45
Masters	33
PhD	39
Postdoctoral Fellows	27
Staff/Alumni	9
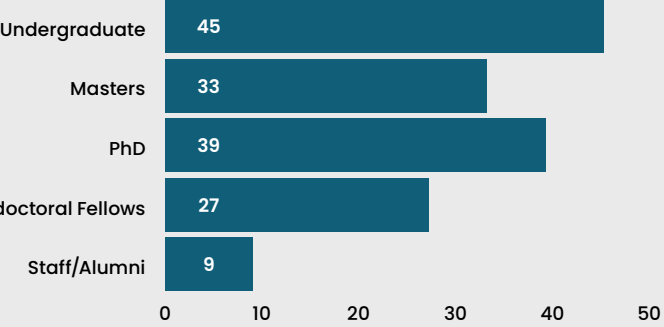
To date, the network has had a total membership of 485 trainees.

In 2024, MIRA hosted 18 events attended by over 500 trainees.

Research

Capacity Building

Networking

Support

- Scholarship Writing Workshop
- Tech for Life Fair
- AURA Research 101
- Pitch Your Project Orientation
- Meet Your Supervisor
- Trainee Talks x 5
- Older Adult Open Campus Day
- Pitch Your Project
- MIRA and Labarge Knowledge Exchange
- Alumnus Talk with Patricia Hewston
- ECR Meet-and-Greet
- USRF Orientation
- Summer Social
- PDF Welcome Breakfast

MIRA member Ada Tang supports trainee research in cardiovascular health

Ada Tang (FHS) has long been a champion of MIRA trainees and a facilitator of impactful, important outcomes in aging research at McMaster.

Working with the MacStroke Canada research team, Dr. Tang's work centres on the impact of exercise on cardiovascular health, fitness, and function in people living with stroke and other conditions. She has built the foundations for the Cardiovascular Health, exercise, and Physical activity after Stroke (CHAmPS) research program and is a leader in stroke recovery research and related clinical trials.

Over the past twelve months, projects involving trainees with Dr. Tang as an investigator secured **$5,920,950 in funding**, including a $5M Research Network of Excellence for Women's Heart and/or Brain Health grant funded by CIHR, H&S and Brain Canada, and the Heart & Stroke-funded "ORDER" (Optimizing Recruitment to Drive Equitable Research opportunity in stroke rehabilitation trials in Canada) trial, which secured $286,000. A $634,950 CIHR Project grant supported research on preventing post-stroke cognitive impairment with multimodal exercise training.

Research led by MIRA trainee **Kevin Moncion** and supervised by Dr. Tang, found that high-intensity interval training was more effective than traditional moderate exercise for improving the body's aerobic fitness after a stroke. Published in American Heart Association Journal *Stroke* in August 2024, the project received widespread media coverage and an Altmetric score of 525 and was picked up by 65 news outlets. Moncion and Tang will present this research to MIRA | Dixon Hall clients at a spring Snacks and Science event.

Named a University Scholar (with fellow MIRA member **Tohid Didar**) and a YWCA Woman of Distinction in 2024, Dr. Tang serves as an important role model for trainees, with a deep commitment to fostering the next generation of researchers in aging. Since 2020, Dr. Tang has acted as a supervisor or interdisciplinary mentor to trainee research, supporting MIRA-funded projects by **Geoff Coombs**, **Michelle Mei**, and **Elise Wiley**, and supported countless MIRA trainees of all levels with research in this space, including 2024 USRF recipient **Juliano Abreu**.
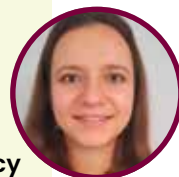
MIRA Trainees
making an impact

2021 MIRA Postdoctoral Fellow **Jessica Breznik** was awarded the Global Nexus / Pfizer Postdoctoral Fellowship in Vaccinology, totalling $75K in research support, and data from her project was used for the development of the National Advisory Council on Immunization's guidelines for vaccination of vulnerable populations.

Examining the role of frailty in SARS-CoV-2 infection and vaccine response, **Jessica's work contributed to Ontario's province-wide decision to provide fourth doses of COVID-19 vaccines to older adults in congregate living settings**—improving protection against infection and severe outcomes in the initial omicron waves of the COVID-19 pandemic.

MIRA | Global Nexus Scholarship-funded work by **Sofya Ermolina** on the role of inflammation in post-pneumonia cognitive decline has gone on to receive a $750K CIHR grant in addition to a $15K Ontario Graduate Scholarship in 2024.

This research aims to determine why being hospitalized for a serious respiratory infection puts older adults at high risk for dementia, **this research has significant policy implications for vaccine uptake in older adults**, and was further detailed in a profile in The Hamilton Spectator.

MIRA Trainees **publishing research**
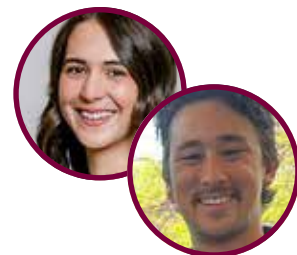
Giulia Colleta and **Kenny Noguchi** were authors on a paper published in PLoS ONE on how online exercise program for older adults improves depression and life-space mobility, based on a 2021 Catalyst Grant supervised by Stu Phillips. Kenny has since accepted a position as a Postdoctoral Research Fellow at the University of British Columbia.

2022 MIRA PhD Scholarship recipient **Karla Martinez Pomier**'s research on the inhibition of toxic metals by human serum albumin was recently published in the Chemical Science Journal. Karla also received the James A. and Irene D. Morrison Scholarship, and the Faculty of Science's inaugural Black, Indigenous and Latin American/Latinx Award for her work aiming to understand the biological mechanisms of aging-related diseases.

Holly Edward was published in the journal Disability and Rehabilitation for her work on the effectiveness of physiotherapist-led tele-rehabilitation for older adults with chronic conditions, funded through a 2023 LCMA Scholarship.

MIRA Trainees
moving forward in their careers

Completing her PhD at McMaster University in the School of Rehabilitation Science in the summer of 2024, **Cassandra D'Amore** accepted a position as a PDF working with the MacM3 team at McMaster, and acted as an integral facilitator and scribe at the International Consensus on Wearables Meeting in November.

Stevie Foglia, who presented research on his work in augmenting the brain to treat chronic pain at the MIRA and Labarge Knowledge Exchange, won first place in the 2024 McMaster Biomedical Engineering symposium, and received the McMaster postdoc Entrepreneur Award.

Congratulations to engaged trainee and 2024 PDF recipient **Aydin Farrokhi**, who accepted a faculty position at Lakehead University at the end of 2024.

MIRA Trainees
leveraging funding

Oishee Ghosh was awarded an Ontario Graduate Scholarship for her work supporting aging-in-place and proactive healthcare management.

Selina Malouka received the Jean Crowe Scholarship for her work on life-space mobility using CLSA data.

Brooke Chmiel received a Canada Graduate Scholarship for research in evaluating carer-inclusive and accommodating organizations, supporting carers in the workplace.

Junfeng Lu was awarded the Michael DeGroote Fellowship Award in Basic Biomedical Science.

Elise Wiley received a StrokeCog Post-Doctoral Fellowship valued at $62,500 to complete her work in cardiovascular research.

Darly Dash was awarded a 2024 Yates Scholarship, the Brian Haynes Student and Health Research Methodology Travel Awards.

Augustine Okoh received Department of Family Medicine Pilot Research Project funding.

Newly funded trainees 2024

Through dedicated funding streams, MIRA supports trainees who pursue aging research at McMaster University. We also partner with leading research organizations to provide additional specialized support, allowing us to fund cutting-edge research that is changing the face of the field.

In 2024, over **$40,000 in trainee funding** was awarded through the **MIRA Trainee Scholarship** program, developing the capacity of future leaders in aging research and generating evidence that contributes to **the well-being of older adults.**

Postdoctoral fellows received over **$300K in funding** for ambitious research that aims to create a future where people live longer, healthier lives. In 2024, projects included two funded by the Labarge Centre for Mobility in Aging and two funded in partnership with other institutes, collaborations that allow MIRA to expand our reach and further shared goals.

In 2024, MIRA was proud to award six **Undergraduate Summer Research Fellowships.** Valued at $2,000, the fellowships are awarded to students working with MIRA researchers on full- or part-time summer research projects.

Legend of McMaster Faculties

BUS DeGroote School of Business
ENG Faculty of Engineering
FHS Faculty of Health Sciences
HUM Faculty of Humanities
SCI Faculty of Science
SOSCI Faculty of Social Sciences

Evaluating and improving the inclusivity and accessibility of a community-based frailty intervention portal

Trainee: Jasdeep Dhillon (FHS)
Supervisor: Cynthia Lokker (FHS)
Mentor: Lauren Griffith (FHS)

Jasdeep Dhillon

Older people who have frailty cope less well when they have a minor sickness or injury. Frailty can make a person's physical, functional, social, and mental health worse. After a hospital stay, recovery for older people with frailty can be harder and they need to be supported to work towards their personal goals for recovery once they are home. The PACIFIC research study addresses "Can a combined package of treatments and local programs (that we know work based on evidence) make life better for older people with frailty who are going home from hospital?" The project intervention will be co-designed with input from older adults and those who take care of them (family members, doctors and nurses, and people from community organizations in Hamilton). One key component of the project is selecting a digital patient portal to make it easier for participants and their care persons to track their activities and to communicate. Using information gathered during co-design sessions, we will select an existing portal that best meets the needs of older people. Through the project proposed here, I plan to apply equity, diversity, and inclusion (EDI) principles to make sure the portal includes resources and tools to support participants of all walks of life.

PET tracers for diagnosis of basal forebrain neurodegeneration in aging

Trainee: Sama Jaberi (FHS)
Supervisor: Margaret Fahnestock (FHS)
Mentor: Saman Sadeghi (ENG)

Sama Jaberi

Changes in brain physiology, loss of brain cells and synapses, and reduction in expression of vital proteins occur before symptoms of memory loss and cognitive decline manifest in older adults.

TrkA is a protein receptor that is reduced early in the aging brain. Detection of TrkA loss, prior to the emergence of clinical symptoms, is crucial in diagnosing age-related cognitive impairment. This project examines a novel method for detecting changes in TrkA levels in live subjects.

Results from this project will contribute to knowledge on the molecular mechanisms at play in aging and aims to develop a new imaging tool for diagnosis of basal forebrain neurodegeneration. This tool will allow early intervention and preventative treatments to slow the progression of cognitive decline.

This project is an extension of a 2022 MIRA Master's Scholarship project.

Applying convolutional neural networks to predict vertebral fracture risk in the lumbar spine using dual-energy X-ray absorptiometry images

Trainee: Taylor Kramer (ENG)
Supervisor: Cheryl Quenneville (ENG)
Mentor: Alexandra Papaioannou (FHS)

Taylor Kramer

The objective of this research project is to use patient characteristics (age, sex, fracture history, etc.) and lumbar spine images to determine an individual's risk of sustaining an osteoporotic vertebral compression fracture within a five-year period.

The end goal of this project is to develop a clinical tool that uses machine learning principles to quantify fracture risk, ensuring that the appropriate clinical preventative measures can be implemented. Machine learning is a powerful tool that can be used to identify combinations of features associated with fracture, and previous research studies have used methods in artificial intelligence to discover pixel patterns and trends from images.

To develop the algorithm, labeled images will be used to develop the training, validation, and test sets that will then be applied to a convolutional neural network capable of recognizing patterns that can be used to predict an individual's probability of sustaining a vertebral fracture.

Postdoctoral Fellows 2024

Labarge Mobility Postdoctoral Fellowship

A novel application of multimodal wearable sensors to detect mobility trajectories in older adults living in the community: Analytical approaches within the MacM3 project

Trainee: Ben Cornish (FHS)
Team: Marla Beauchamp (FHS), Paul McNicholas (SCI), Qiyin Fang (ENG)

Ben Cornish

Walking is the most common and accessible dimension of mobility in daily life. Methodological approaches for walking analytics, using body-worn sensors and GPS sensors, have been studied extensively. Individually, these sensors characterize walking in unique ways. Body-worn accelerometry is capable of deriving step to step characteristics which can uncover markers of disease or instability, however, these data often lack context that can affect performance, such as indoors vs. outdoors. Conversely, GPS sensors can capture details about location and engagement with a person's community to better contextualize mobility behaviors but are limited in accuracy of mobility modes and movement inside buildings. There is evidence to suggest that the combination of these sensors can improve characterization of mobility (e.g., determine mode of transportation), however, there is limited research combining these methods to describe and contextualize mobility with high accuracy in daily life. The proposed work aims to combine the strengths of these sensors to assess human mobility in people's everyday life.

Labarge Mobility Postdoctoral Fellowship

Mobility and functional capacity estimated in clinical and free-living settings to support older adults and clinical populations: Aging and osteoarthritis in Canada

Trainee: Vincenzo Di Bacco (SCI)
Team: Dylan Kobsar (SCI), Marla Beauchamp (FHS), Anthony Adili (ENG)

Vincenzo Di Bacco

Osteoarthritis (OA) is an incurable degenerative joint disease characterized by the loss of cartilage and change in bone, resulting in pain and reduced function for over four million Canadians. Knee OA is a global disability contributor, linked to aging frailty. The end-stage treatment for knee OA is total knee arthroplasty (TKA) which involves the replacement of damaged parts of the knee with prosthetics. However, clinical decision-making remains a one-size-fits all approach that fails to adequately integrate patient-specific disease severity, pain, depression, physical activity, and everyday function. Wearable sensors permit the collection of detailed movement data in-clinic or real-world settings with the potential to support treatment decisions. This project aims to: (1) identify functional measures most sensitive to change post-TKA, (2) determine if improvements in pain and functional capacity post-TKA results in actual changes to free-living mobility, and (3) determine if TKA restores mobility to the level of healthy age-matched controls.

MIRA Postdoctoral Fellowship

Investigating collective impacts of physical activity, sedentary time and sleep duration on mobility outcomes in older Canadians: A compositional data analysis approach within the MacM3 project

Trainee: Shawn Hakimi (FHS)
Team: Marla Beauchamp (FHS), Stuart Philips (SCI), Rong Zheng (ENG)

Shawn Hakimi

The distribution of time spent in daily movement behaviours (physical activity, sedentary time, sleep duration) over the course of a day (24-H) has implications for mobility outcomes in older adults. For this project, a novel analytic technique called compositional data analysis (CoDA) will be applied to movement behaviour data leveraged from the MacM3 study to examine differences in how older adults with differing mobility levels allocate their time across daily movement behaviours and to determine and identify the optimal distribution of time spent in these behaviours for favourable mobility outcomes. To date, the impacts of movement behaviours on older adult health outcomes have primarily been studied using traditional statistical techniques which may lead to erroneous conclusions because they treat movement behaviours as independent form each other, and do not account for the fact that the time spent in these behaviours make up a composition of fixed time of 24-H a day.

Labarge Mobility Postdoctoral Fellowship Aging Brain

Dynamic interactions in neurodegeneration and pain: A 3D in vitro model approac

Trainee: Seyedaydin Jalali (ENG)
Team: Ravi Selvaganapathy (ENG), Margaret Fahnestock (FHS), Aimee Nelson (SCI)

Seyedaydin Jalali

As global populations age, the prevalence of neurodegenerative diseases like Alzheimer's is increasing, along with chronic pain, which is tied to nervous system health and becomes more common with age. This project aims to address these challenges by developing three-dimensional models of neural tissue in the lab, using silicone-based materials. A dual-chamber device with a three-dimensional muscle model will simulate exercise and study its effects on aging neural tissues. The research also focuses on creating models of aged and healthy neuronal tissue to understand pain mechanisms in older adults. By studying how aging affects signal transmission and metabolic responses, the project aims to uncover the cellular interactions behind chronic pain. These models will help simulate age-related changes in neural function, providing insights that could lead to new treatments, especially by exploring how physical activity benefits brain health and reduces the impact of neurodegenerative diseases and chronic pain in older adults.

MIRA Postdoctoral Fellowship

Towards a hyperlocal future of aging: Empowering marginalized seniors through community-based participatory research, engagement and co-creation

Trainee: Cameron Murray (SCI)
Team: Alexander Hall (SCI), Melissa Northwood (FHS), Michelle Wyndham-West (SOCSCI)

Cameron Murray

In collaboration with The Neighbourhood Organization (TNO), this project confronts the needs of racialized and underserved seniors in hyperlocal urban communities. Design (or redesign) of "age-friendly cities and communities" to help people to age-in-place often assume that these challenges need to be addressed through population-level demographic, biomedical and technological research and innovations.

This project critiques these assumptions, combining anthropology and design research to imagine solutions for the future of aging through direct collaboration with community health workers, activists and vulnerable seniors. Throughout, we will critically assess and reassess whether, how, and to what extent we are truly and measurably empowering a grassroots approach to co-designing new programs, policies, services and care environments in these unique urban contexts.

MIRA Postdoctoral Fellowship co-funded with IPRC

Pain knowledge and methods for delivering information about pain for community-dwelling older adults

Trainee: Veronica Souza Santos (FHS)
Team: Luciana Macedo (FHS), Aimee Nelson (SCI), James Gillett (SOSCI), Tiê Yamato, (University of Sydney, Australia), Mariana Leite (Universidade Cidade de São Paulo, Brazil)

Veronica Souza Santos

Currently, the first line of treatment for pain in older adults includes a combination of physical activity, manual therapy, and pain education. Pain education has been found to improve knowledge about pain and self-management leading to a reduction in pain intensity and disability in the general population.

This study aims to assess current pain knowledge, identify the preferred methods (e.g., booklets, classes) of pain education delivery and understand the needs, barriers and facilitators for older adults' pain education. We will conduct a mixed-methods study including a cross-sectional survey and a qualitative interview, and use the Pain Concepts Questionnaire to assess the current pain knowledge and a preferences survey for receiving pain education.
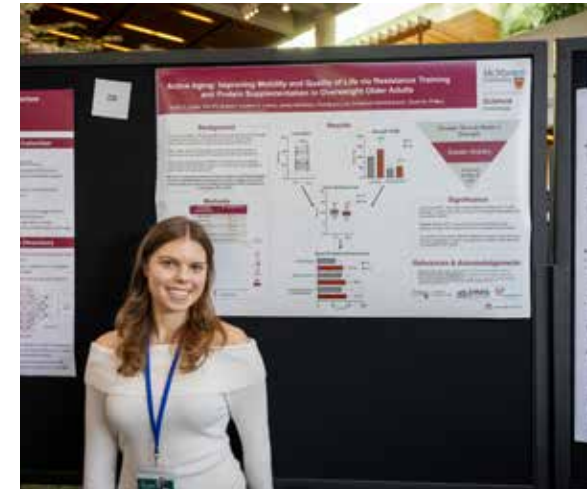
MIRA Undergraduate
Summer Research Fellowships

POWER Exercise for Stroke Recovery (POWER): Ensuring fit for diverse abilities after stroke

Trainee: Juliano Abreu
Supervisor: Ada Tang (FHS)

Age-related microstructural changes at the osteochondral junction: Investigating cellular network in osteoarthritis

Trainee: Amy Hutchinson
Supervisor: Jinhui Ma (FHS)

Barriers in living spaces and homes for individuals living with dementia

Trainee: Sowmiya Konesaran
Supervisor: Anthea Innes (SOCSCI)

The effects of high repetition, lower resistance strength training alongside protein supplementation on mobility, muscle mass and strength over a 12-week period in obese and overweight older adults

Trainee: Sarah Lyons
Supervisor: Stuart Phillips (SCI)

A pilot validation study for a food-frequency questionnaire assessing muscle-health nutrients in older adults 65 years of age

Trainee: Miriam Samuel
Supervisor: Janet Pritchard (SCI)

Capacity-building activities

MIRA supports trainees through **capacity-building activities** by collaborating with McMaster and community partners to offer unique educational opportunities in aging. Poster sessions, community research fairs, interdisciplinary knowledge exchange, networking and speed mentoring join regular skill-building workshops and presentations that equip trainees with the tools to bring their research to the next level. This skill scaffolding cements MIRA's legacy in producing leaders in aging research into the future.

Pitch Your Project

In early summer, 40 McMaster trainees, faculty, staff, and members of the aging research community gathered at The Phoenix on McMaster campus **Pitch Your Project**. This annual showcase asks trainees from across McMaster to present their research projects in aging in a "three-minute-thesis" style, with just one slide.

Twelve trainees, ranging from undergraduates to PhD candidates, shared concise and considered "elevator-pitch"-style overviews on their research projects representing cross-discipline approaches to answering the big questions about how to age well. Presentations explored topics including sarcopenia, accessibility in music, and frailty, and included research into social isolation among Black older adults, amyloids, macrophages, and more.

Pitch Your Project provides a space for trainees to develop vital knowledge translation skills while connecting, networking, and learning about each other's work. **Amy Hutchinson**, **Helana Marie Boutros** and **Rae Elgamel** were awarded the people's choice award for best presentations.

Trainees present research to the community

2023 MIRA-funded PDF **Vanessa De Rubeis** presented her research on aging well based on lessons learned from CLSA data at a Bites and Insights event held at Hamilton Public Library, Sherwood branch.

Recipient of the 2023 MIRA PhD Scholarship (co-funded with AGE-WELL) **Sophini Subramaniam** presented her research on an insole-based sensor system for gait analysis at a Bites and Insights event in Dundas. This research was also awarded a $15K Ontario Graduate Scholarship and a Dean's Award for Communication in Graduate research.

MIRA and Labarge Knowledge Exchange Poster Fair

At the 2024 MIRA and Labarge Knowledge Exchange in October, **Stevie Foglia** presented on his exciting research into augmenting the brain to treat chronic pain to the crowd of over 200 attendees. He was joined by **Alexandra Mayhew**, who presented her award-winning research on normative values for strength and function, derived using CLSA data.

Over **45 trainees submitted posters** to be judged at an interdisciplinary aging research poster fair held at the event. In 2024, trainee posters were presented online, providing an overview of MIRA-funded trainee research and a useful public record of research for trainees looking to move forward in their careers.

Poster winners
GOLD Undergraduate **Karina Tavernese**
SILVER Undergraduate **Juliano Abreu**
GOLD Master's **Shelby Prokop-Millar**
SILVER Master's **Shivam Gupta**
GOLD PhD **Darly Dash**
SILVER PhD **Komal Aryal**
GOLD PDF **Talha Rafiq**
SIVER PDF **Jinfeng Huang**
SIVER PDF **Alexandra Mayhew**

Trainee Talks

In 2024, the MIRA Trainee Network hosted five **Trainee Talks** events, a showcase of trainee aging research from across the University.

Over 100 trainees from all Faculties gathered at the McMaster CoLab to network, share lunch, and listen to presentations from their peers on aging research projects.

This regular event allows trainees to develop presentation skills, while staying up to date on funding opportunities and strengthening connection with MIRA and their aging research peers.

The **McMaster Passport for Aging Education (macPAGE)** program provides learners with a structured record of participation in research in aging activities across modalities. A tool to support trainees to communicate the value of out-of-classroom experiences, macPAGE supports trainees in their pursuit of future employment and educational opportunities.

In 2024, 63 trainees are enrolled in the macPAGE program and eight received completion certificates. Learners described their experience in the program as "eye-opening," "transformative," and "meaningful," and noted that participation reinforced the importance of keeping the needs, feelings, and opinions of older adults in mind as they continue to pursue their future careers in aging.

In 2024 MIRA hosted the **Scholarship Proposal Writing Worksho**p, a one-day in-person event featuring experts and mentors in research from across McMaster presenting on tools to develop a focused and cohesive scholarship proposal.

This event joined the **Grant Writing Workshop**, a series of virtual and in person meetings spread across the year, based on a series developed by MIRA trainee Kenny Noguchi and supported by a MIRA trainee planning grant.

The aim for both events were to arm MIRA trainees with the tools to write successful applications, building capacity to leverage MIRA support into internal and external funding. All attendees were offered all attendees the opportunity receive feedback on their applications, and both were met with universally positive feedback that the workshops would increase the likelihood that they would apply for trainee funding.

The advice and insights were extremely eye-opening, and motivated me to effectively and authentically engage community members in every phase of research going forward. – ***Undergraduate attendee***

Attending this workshop greatly enhanced my understanding of the key elements in preparing scholarship applications. The valuable insights gained can be immediately applied to both my current and future award applications. The practical exercises and expert guidance were particularly impactful. – ***MIRA PDF attendee***

Networking Opportunities

MIRA fosters an environment of interdisciplinary collaboration through a variety of professional **networking** opportunities. Trainee success requires more than just classroom learning —it involves gaining exposure, refining skills and engaging with the broader academic community.

Connection with other aging research trainees fosters interdisciplinary collaboration, peer support and the exchange of diverse ideas. Trainees are provided opportunities to meaningfully connect with pioneering McMaster researchers in aging, visiting scholars, and professional experts, receiving integral mentorship from leaders in the field.

MIRA support catalyzes collaboration from undergrad to PhD

Giulia Coletta's journey as a MIRA trainee is a testament to the transformative power of mentorship and collaboration. Beginning as a 2018 MIRA USRF, Giulia worked under supervisor Janet Pritchard (SCI) on the prevalence of sarcopenia among older adults. In 2019, her research on live online exercise sessions for older adults during the pandemic earned a Labarge Master's Scholarship supervised by MIRA member Stu Phillips.

First introduced by Dr. Pritchard in 2017, Giulia's work on the development of a nutritional workshop was published in the Canadian Journal of Dietetic Practice and Research in 2021, citing Master's student Giulia as a first author. A series of workshops emerging from this research became a networking catalyst, allowing students to apply classroom knowledge, enhance communication skills, and assist older adults in adopting healthier eating habits.

In 2024— as Giulia defended her PhD under Stuart Phillips, having published another significant paper in 2023 — 28 students brought the nutrition science workshops to the community through the Ancaster Senior Achievement Centre, Sackville Hill Senior's Centre, Stoney Creek Recreation Centre and on campus at the Physical Activity Centre of Excellence (PACE).

Through connections fostered by MIRA at all levels of Giulia's academic trajectory, this initiative is having a tangible impact on older adults in the community while attracting new trainees to aging research. Her journey highlights MIRA's impact on developing, as Dr. Pritchard notes "more educated, compassionate, energized students who are invested in helping older adults stay active and in their own homes for longer."

Meet Your Supervisor

Connecting undergraduate trainees from all six McMaster Faculties with MIRA members offering training and research opportunities, Meet Your Supervisor, an annual event co-hosted by MIRA and the Association for Undergraduate Research in Aging (AURA), invited trainees in the beginning of their careers to meet aging researchers at McMaster, identify pathways for collaboration while honing communication and self-pitching skills.

Sixteen potential supervisors, from early-career researchers to seasoned project leads joined over 35 trainees seeking hands-on research experience, cultivating collaboration across the diverse McMaster academic landscape.

GSPDAs

Valued at $500 per award, **Graduate Student Professional Development Awards (GSPDA)** offer essential support to facilitate research activities including travel to international conferences, for trainees working with MIRA researchers.

Emily Anne Hicks, supervised by Heather Sheardown (ENG), presented Elucidating the role of Proteoglycan 4 (PRG4) in retinal pigment epithelial cell homeostasis at the Association for Research in Vision and Ophthalmology Annual Meeting 2024 in Salt Lake City, Utah.

Eseoghene Orogun and **Fatima Gafoor**, both supervised by Dylan Kobsar (SCI), presented on Smart insole validation for assessing foot progression angle and Concurrent analysis of knee kinematics between Theia 3D Markerless and OpenCap, an Open-Source markerless motion capture system at the 2024 OARSI World Congress on Osteoarthritis in Vienna, Austria.

Komal Aryal, supervised by Andrew Costa (FHS), presented on Identifying factors associated with medical assistance in dying for older adults in Canada at the Canadian Association for Health Services and Policy Research 2024 conference in Ottawa, Canada.

Jiyeon Park, supervised by Aimee Nelson (SCI & ENG), presented on Advanced controlled transcranial magnetic stimulation to alleviate pain in diabetic neuropathy at the 6th International Brain Stimulation Conference in Kobe, Japan.

Jasdeep Dhillon, supervised by Cyntia Lokker (FHS), presented on MIRA MPR PACIFIC at Frailty, Illness and Health in Deep Old Age: Perspectives from Medical Sociology and Social Gerontology conference in Liverpool, England.

Communications and Support Network

MIRA offers comprehensive support to the next generation of aging researchers through fulsome guidance and tailored communication about opportunities for growth. The Institute strengthens McMaster's network of aging research trainees by building confidence, increasing visibility and enhancing the quality of their research outputs throughout their careers.

Weekly newsletters, standalone emails and monthly research communications join an active social media presence that lets trainees know that MIRA is always available to answer questions and support them on their aging research journey. Group events like the Trainee Summer Social, the Alumni Talks and Meet-and Greet sessions with new USRSFs and PDFs and ECRs assure trainees that MIRA supports them at all levels of their aging research journey.

MIRA has been essential in helping me make interdisciplinary connections, gain verbal and written communication skills, and providing me with the opportunity for knowledge dissemination through MIRA's various events. All of these opportunities are important for my professional development and are a critical part of my path to becoming an independent researcher in the field of mobility and aging.

– Selina Malouka,
2022 Labarge Scholarship recipient

Community Engagement

MIRA engages the community at every step of our research process, with community members deeply involved in the co-creation and codesign of our projects from inception to outcome. This ensures that the research we support is immediately useful and highly relevant.

MIRA collaborates both on campus and off to enhance the health and longevity of Canada's aging population through community-focused initiatives. The Institute supports McMaster's membership in the international Age-Friendly University Network, advocating for universal accessibility in higher education. Through partnerships with the Hamilton Council on Aging and the City of Hamilton, MIRA helps older adults age well and stay engaged through public events and consultations.

In 2024, MIRA engaged with hundreds of older adults through outreach events, connecting with diverse audiences at community fairs and presentations at YMCAs, libraries, union meetings, and community conversations.

By meeting the community where it is, MIRA promotes our initiatives while fostering a wide-reaching culture of research participation and excitement. In the following pages, you will see how MIRA makes an impact not only through our research outcomes but also directly on the McMaster campus, throughout Hamilton and Toronto, and nationally and internationally through innovative online platforms. Our work also influences policymakers, ensuring that our impact is both immediate and long-lasting.

The **MIRA | Dixon Hall Centre** is a vibrant hub of community engagement, dedicated to making a meaningful difference in the lives of equity-deserving older adults. This unique partnership between the McMaster Institute for Research on Aging (MIRA) and Dixon Hall—one of MIRA's research centres—combines Dixon Hall's expertise in community-based client care with MIRA's innovative research programs working to empower individuals to live well and with dignity as they age. **The Centre aims to support initiatives that are accessible, inclusive, and empowering—representing and reflecting the experiences of individuals often excluded from research.** This collaborative approach allows us to tackle complex issues with comprehensive solutions, making a real difference in the community.

In January 2024, MIRA re-launched our community newsletter, inviting older adults, service providers, and caregivers to engage with aging research in a more accessible way. Arriving monthly, the newsletter features updates on MIRA and partner news, invitation to aging research events, calls for participants for research studies and evidence-based articles and resources from the Optimal Aging Portal.

This re-launch led to a 66% increase in followers in 2024, growing from 634 to 1,050 engaged community members who now receive valuable resources and invitations to participate in aging research every month.

Research reaching underserved communities
through the MIRA | Dixon Hall Centre

The MIRA | Dixon Hall Centre combines expertise in comprehensive community-based client care with MIRA's excellence in creating innovative research programs centered around aging and older adults.

Located in Toronto's downtown East, the Centre works to ensure research in aging reaches and reflects underserved communities who may be marginalized by poverty, social injustices and isolation.

Snacks and Science

In 2024, the MIRA | Dixon Hall Centre hosted three **Snacks and Science** events, welcoming well over 200 older adults, service providers and community partners to engage with MIRA-funded research, share perspectives, and learn from each other over a shared meal and social event.

A dynamic lecture series designed to address the unique needs of marginalized older adults, Snacks and Science expertly amalgamates MIRA's expansive research projects with the vibrant and engaged Dixon Hall community, creating a perfect space for co-learning and research growth. Accessible, interesting and of high value to all attendees, the Snacks and Science series embodies MIRA's mission to foster community-engaged research, ensuring inclusivity for all communities.

In January, **Rebecca Ganann** (FHS) presented on **social isolation, loneliness and well-being**, and introduced the Dixon Hall community to the EMBOLDEN initiative. The event kicked off a successful recruitment drive for EMBOLDEN's expansion into the socioeconomically isolated St. Jamestown neighborhood.

Sachi O'Hoski, Scientific Operations Manager of the Centre, hosted with PDF **Cassandra D'Amore** in June. The event introduced Moving Together—a forthcoming potential program for MIRA | Dixon Hall, aimed at helping socially isolated older adults meet **Canada's 24-Hour Movement Guidelines**. The at-capacity audience was invited to stand and participate in interactive exercise demonstrations.

In December, **Anthony Levinson** (FHS) connected with the community through a presentation on tips for **reducing risk for dementia** and presented the Optimal Aging Portal as a source for evidence-based aging information.

Efforts to present complex information in an accessible, interesting and applicable manner were well-received by the audience, who engaged with Dr. Levinson long after the presentation concluded.

Research reaching underserved communities
through the MIRA | Dixon Hall Centre

Engaging the public with interactive and accessible age-tech solutions, trainees from the Smart Mobility for the Aging Population (sMAP) group joined over 90 members of the Dixon Hall community for **MIRA's Tech For Life Fair** at the MIRA | Dixon Hall Centre in 2024. Interactive presentations and demonstrations from MIRA-funded research projects connected attendees with technology-focused projects on aging well in a fun, interactive, and exciting learning environment.

The event provided an excellent opportunity for trainees to scaffold skills in presenting their age-tech research, while participants benefited from direct engagement and practical insights. Participants eagerly engaged with the projects and trainees, especially at the bustling tech assistance booth where trainees provided hands-on support for practical technology questions.

Senior's Tech Lounge

Beginning in 2024, every Friday Dixon Hall holds a Technology Lounge for Older Adults—drop-in program which provides digital literacy and technology training and troubleshooting to Dixon Hall clients looking to improve technology skills and access.

Supported by a generous donation from Suzanne Labarge, the lounge offers a safe and welcoming space for engaging with technology while providing tailored support to meet each client's unique needs. Participants are invited to regularly attend facilitated discussions and have access to a library of learning materials. As a community lab for digital literacy and evidence-based interventions, the lounge supports research projects on technology and digital literacy, including 2024's MIRA | Dixon Hall Knowledge Synthesis grant led by Brian Detlor (BUS). Acting as an ongoing example of co-design in action, the lounge offers the opportunity for researchers to engage with the community in a natural setting and access valuable end-user perspectives while building practical skills and confidence in technology for the Tech Lounge users, making a meaningful difference in their lives.

Co-designed community engagement **in action**

MIRA's work emphasizes co-design principles; meaningfully involving end-users throughout the research process. This approach ensures that outcomes are more relevant, effective, and user-friendly, as they are shaped by the insights and experiences of those who will use them.

Key elements of effective co-design:

- **Collaboration:** Engaging end-users and stakeholders throughout the entire process.
- **Inclusivity:** Ensuring diverse perspectives are represented and valued.
- **Empathy:** Understanding and addressing the needs, experiences, and challenges of end-users.
- **Iteration:** Continuously refining and improving designs based on feedback.
- **Transparency:** Maintaining open communication and sharing progress with all participants.
- **Empowerment:** Giving end-users a sense of ownership and influence over the outcomes.

Access barriers can make universities and research environments feel unwelcoming to older adults, reducing their engagement and enthusiasm for research. To address this, MIRA launched a yearlong series of events in 2024 to build understanding and encourage research participation among local adults.

The **Bites and Insights** series, held at Hamilton Public Libraries from Dundas to Stoney Creek, asked community members how the University can improve and enhance connection with older adults. Featuring presentations on aging research, open discussions, and design-thinking exercises. Community members provided feedback on engagement barriers with McMaster and expressed excitement about on-campus opportunities and pride in the University's research contributions. By meeting the community in their own spaces and inviting perspectives, MIRA facilitated reciprocal and responsive trust in the Institute's work, allowing us to support and develop an engaged community of older adults excited about aging research.

Ian Bruce presented on hearing loss and music, including how to improve accessibility for people with hearing difficulties.

James McKinlay discussed the McMaster Optimal Aging Portal and using research to empower decisions that support aging well.

Sophini Subramaniam addressed technology and mobility including what we can learn from health and mobility wearables.

Vanessa De Rubeis highlighted what we have learned about aging well from participants in the CLSA.

Older Adult Open Campus Day

On September 20, McMaster buzzed with excitement as over 70 older adults and 50 students came together for **Older Adult Open Campus Day (OAOCD)**, welcoming older adults from the Hamilton community and McMaster undergraduates in unlocking new on-campus experiences and opportunities across generations.

Co-organized by MIRA and the Gilbrea Centre for Studies in Aging, and funded in part by the Government of Canada's New Horizon's for Seniors Program, the second annual OAOCD hosted small groups of older adults and students led by volunteer guides in exploring spaces like the McMaster Nuclear Reactor, W.J. McCallion Planetarium and more, including aging research-focused spaces such as Ivor Wynne Centre's Physical Activity Centre of Excellence (PACE) and the new Gilbrea headquarters in Kenneth Taylor Hall. The event concluded with attendees- including McMaster alumni, former staff, and proud family members of current students- gathering from all corners of campus at The Hub for an illuminating lunchtime presentation on brain health by Dr. Anthony Levinson.

Built on feedback from the Bites and Insights and OAOCD, MIRA developed the Sage Conversations series...

Local seniors' residence Shalom Village—who connected with MIRA at the City of Hamilton Senior's Fair in early summer—visited **The Mills Library Archives** and the brand-new **Biology Greenhouse**, travelling through campus on their residence bus.

Older Adult Open Campus day is a result of McMaster's commitment to enhancing accessibility, inclusion, and the overall well-being of older adults through meaningful involvement in research and campus activities. This exciting day also fosters connections between older adults and students, building understanding and learning, improving intergenerational communication skills and providing valuable insights for students while engaging and empowering older adults to feel comfortable and welcomed at the University.

Building on trust and engagement developed through responsive co-design, in Fall 2024, MIRA launched the **Sage Conversations** series. Showcasing McMaster's research strengths across disciplines, the event series invited older adults to interesting and engaging activities highlighting MIRA research, including a one-woman show by researcher Dawn Bowdish (FHS) on her research into aging and infectious disease, a duelling cello concert at research partner the LIVElab featuring a presentation by Ian Bruce (SCI) on his MIRA-funded research into accessible hearing devices, and visits to the fan-favourite W.J. McCallion Planetarium.

MIRA's Voice reaches the community far and wide

Presented in Canada by MIRA, **Voice** is a free, all-in-one online platform for community engagement in research. By bringing together researchers, older adults, caregivers, and the public, Voice promotes the co-design process, encouraging the exchange of ideas and insights to help guide aging research throughout its development.

In 2024, MIRA promoted Voice through in-person events across McMaster, Hamilton, and Dixon Hall, emphasizing the value of user engagement and fostering a culture of research participation. Through MIRA's support, Voice has grown to over 180 members and 90 researchers, who have engaged with over 130 articles, 30 opportunities, and 5 groups. These interactions have included shaping research in primary health, participating in brain health and exercise studies, and attending MIRA events and webinars.

Engagement with the public through Voice facilitates sharing of MIRA research findings directly with communities, positively impacting their health and well-being. By leveraging Voice, MIRA disseminates evidence-based information and news on aging innovations from resources like the McMaster Optimal Aging Portal, amplifying MIRA's work and creating an integrated space for easy research participation and access to trustworthy information.

Created by the National Innovation Centre for Ageing at Newcastle University, Voice represents an important international partnership and continued investment in a community of committed, connected research participants and community partners. Looking ahead, MIRA plans to grow the community across Canada, expanding the Voice network to other university partners that share the Institute's passion for tackling the big questions in aging research.

"Voice Canada is a powerful tool for bringing community members together to contribute their knowledge and experiences to our big questions in aging research, with their input shaping our processes and solutions. We look forward to expanding the reach of Voice Canada across the country in 2025.""

Parminder Raina, *Scientific Director of the McMaster Institute for Research on Aging*
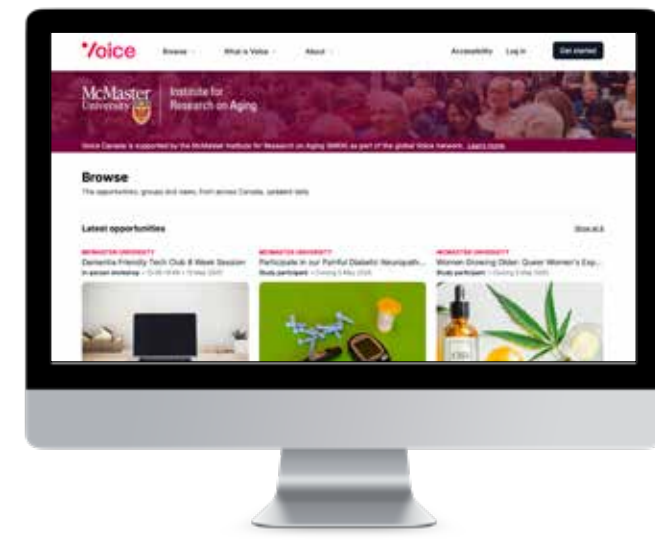
Knowledge **Mobilization**

MIRA's mandate of **knowledge mobilization** means we work toward disseminating complex research findings in a way that is accessible, understandable, and of high utility. This involves not just sharing evidence-based information in a timely fashion but ensuring that it is presented in a way that can be easily applied in real-world settings.

By bridging the gap between research and practice, we ensure that our research findings reach healthcare providers, policymakers, and the general public, ultimately improving health outcomes, informing policy decisions, and enhancing overall health and well-being.

MIRA researchers **mobilizing knowledge**

Anthony Levinson (FHS) ensures that his work is mobilized by meeting audiences both at their location and level, making complex scientific information on dementia and aging accessible and engaging for the public. Already a champion of knowledge mobilization as a key contributor to the Optimal Aging Portal, in 2024 he reached diverse audiences across campus, Hamilton, and Southern Ontario through over 25 community presentations and media appearances, including at YMCA fairs, on CBC news and the Toronto Home Show.

Addressing hundreds of older adults, community partners and policymakers on practical pathways to reduce risk of dementia, Dr. Levinson hosted a Lunch and Learn at MIRA's Older Adult Open Campus Day and travelled to Toronto for a MIRA | Dixon Hall Centre, Snacks and Science presentation. Attendees engaged in discussions on medication, high blood pressure, exercise, and lifestyle habits, connecting with the research and asking questions long after presentations concluded. By engaging directly with the audience and discussing personal impacts of the research, Dr. Levison builds trust and enhances understanding in this critical and often sensitive field. Participants reported gaining a new understanding of the importance of lifestyle changes and a reduced reluctance for medical assessment and intervention.

"The presentation was very helpful and very informative"

"It was very easy to understand and very informative. Fantastic speaker"

"It was well presented. The knowledge was easy to understand and remember"

Ashwini Namasivayam-MacDonald (FHS), whose research focuses on swallowing difficulties in older adults, leveraged MIRA support into a $100K Early Investigators Springboard Program grant from the Canadian Frailty Network (CFN); she has listed MIRA as a "stakeholder partner" on an Ontario SPOR SUPPORT Unit EMPOWER grant application to facilitate knowledge mobilization based on the CFN grant's findings. Her Aging Swallowing Lab held its first "Preparing for Mealtime Changes" event in June in Hamilton, connecting caregivers and loved ones of individuals with dementia to vital information and resources. A member of a large American consortium of best practices for swallowing, she has also launched a quarterly newsletter for individuals with swallowing difficulties, their caregivers, and clinicians, and will be presenting at a Fall 2025 Snacks and Science event.

Dante Duarte (FHS) has made significant strides in 2024 in neurostimulation research for affective and neurocognitive disorders, particularly in geriatric populations for work supported by the 2023 Early-Career Innovation Award funded by the LCMA and the Psychiatry Department. This project not only holds significant clinical impact but also served as the cornerstone for launching the Peter Boris Center Neuromodulation Initiative, a comprehensive research program addressing various psychiatric conditions. Trainee **Shelby Prokop-Millar** won gold for her poster presentation on this work at the 2024 MIRA and Labarge Knowledge Exchange.

MIRA trainees mobilizing knowledge

Maggie MacNeil's work on the importance of co-design gleaned through the EMBOLDEN project was disseminated to trainees and older adults in 2024 through a Collaborative Conversation event. The project's findings have also been shared at aging-related conferences across North America, and a major publication from this work is in the 88th percentile for online attention among similar articles, accessed over 2200 times according to Altmetric.

Rebecca Correia is advancing senior care by studying family doctors with "Care of the Elderly" training, strengthening healthcare access and improving primary care for aging Canadians. In 2024, her MIRA PhD Scholarship-supported research was published in Canadian Family Physician. She was also awarded the inaugural McMaster Centre for Health Economics and Policy Analysis (CHEPA) doctoral research scholarship to support emerging scholars who are addressing critical health-care challenges.

Evolving from a MIRA Undergraduate Summer Research Fellow project led by Marfy Abousifein, MIRA trainee **Karina Tavernese** produced a video on the importance of research co-design & partnership with older adults & caregivers for the McMaster Collaborative for Health and Aging.

Tina Liu's startup AgeUnity was awarded a top ten finish at the 2024 International Conference on Aging, Innovation & Rehabilitation. Developed with Fateme Pourghasem, the online platform fosters meaningful relationships and enhancing community engagement for older adults, combating isolation by strengthening social and cultural connections in urban communities.

The Fit-Frailty App, developed with support from MIRA, AGE-WELL and EPIC-AT funding, was launched in 2024. Developed as a diagnostic tool for frailty, the app is further being utilized in the "Sixth Sense" program in Hamilton Health Sciences locations, providing objective six-second measurements for patients. 2023 MIRA EPIC-AT post-doctoral fellow **Aastha Relan** received the People's Choice Award for Research & QI Excellence at the 2024 McMaster Geriatric Medicine Research & QI Showcase for her work on the project.

"The Institute is meticulous in addressing complex research questions about how to age well, developing solutions forged from interdisciplinary perspectives, and ensuring results are impactful to a broad, inclusive and diverse community."

Suhkvinder Obhi, *Associate Vice-President, Research, Society and Impact of McMaster University*

The 2024 MIRA and Labarge
Knowledge Exchange

In October 2024, MIRA welcomed over 150 faculty members, trainees, and community partners to the annual **MIRA and Labarge Knowledge Exchange** at Burlington's Royal Botanical Gardens. The event celebrated aging research collaborations and accomplishments over the past year and introduced exciting new directions and innovations for the future.

Opening the annual event for 2024, Dr. Suhkvinder Obhi from the Office of the Vice President of Research hailed MIRA as "a cornerstone of McMaster's commitment to aging research." MIRA's Scientific Director, Parminder Raina, presented an inspiring overview of a year marked by innovation, collaboration, and impactful research. The sentiment was strengthened by Marla Beauchamp, Director of the MIRA | Dixon Hall Centre, who detailed an impressive suite of impactful, community-driven research.

2024 offered fresh new twists to the Institute's flagship event. As always, the Knowledge Exchange celebrated MIRA's mission to crystalizing diverse research skillsets and insights into impactful research outputs, featuring exciting research presentations from an esteemed cross-section of projects from researchers from all six McMaster Faculties.

For the first time at the event, over $600K in new funding was announced, celebrating rising stars in aging research through eight Catalyst Grants and six Postdoctoral Fellowships. Supporting concepts of physical, social, financial and digital mobility: the exiting new research projects cover topics ranging from fall prevention, climate change, pain, cognitive decline, joint infections, artificial intelligence, optimal aging among migrant returnees and gig work for older newcomers.

A cornerstone of the event is always the highly anticipated poster fair, this year hosting over fifty entrants presenting projects addressing questions in aging from diverse perspectives. Attendees explored mobility research in action through live demonstration of a gait analysis tool currently in use at Hamilton Health Sciences locations, an introduction to new CLSA olfactory measures and tours of MDTRC's Mobile User Experience Lab (MUXL), which brings research to communities that may not have access.

The MIRA and Labarge Knowledge Exchange provided an opportunity to introduce new, exciting directions for the institute, including the new Research Initiative in Aging and Pain, led by Dr. Luciana Macedo. Dr. Margaret Fahnestock presented an in-depth analysis of exercise and the brain, while trainee research highlights included Stevie Foglia's work on augmenting the brain to treat chronic pain and Alexandra Mayhew's research using CLSA data to develop normative values for assessing strength and functioning in older adults, which earned the Dhole-Ecclestone prize.

The event closed with remarks from Suzanne Labarge, McMaster's former chancellor and generous supporter of aging research, who announced poster competition winners, reflected on the year's accomplishments and provided further inspiration to future endeavors. Thank you to Suzanne, whose vision and continued commitment to aging research is critical to the success of this vibrant community.

Evidence-based knowledge mobilization:
the McMaster Optimal Aging Portal

The **McMaster Optimal Aging Portal** continues to grow as a key resource to support older adults, caregivers, clinicians, public health professionals, social system professionals, and policymakers from around the world who are looking for a trusted source of credible, evidence-based information about the health and social aspects of aging.

During 2024 the Portal team continued to focus on adding citizen-targeted content covering both the health and social aspects of aging, increasing the Portal's presence in social media, and exploring opportunities for sustainable funding. We continued leveraging other initiatives, for example the MIRA | Dixon Hall Centre, the e-learning programs led by the DeLI, and the McMaster Health Forum's CIHR-funded work on combatting misinformation and disinformation, and the Forum-hosted Global Evidence Commission's work on ways to support putting evidence at the centre of everyday life.

This year, the Portal continued to expand its content offerings, producing a number of enhanced multimedia, including video blog posts, e-learning lessons, and email-based 'micro-learning' series on a variety of topics.The team also continued to host health and wellness webinars in collaboration with the McMaster Alumni Association which brought over 6,7500 people to 4 events throughout the year.

A grant from the Public Health Agency of Canada as well as a private donation allowed paid promotion for content related to dementia risk reduction to be promoted to Canadians across the country.
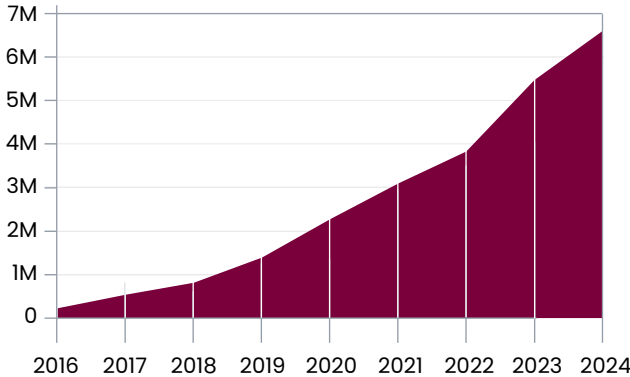
6,582,778 users
since the Portal launched in 2016
Each year better than the previous
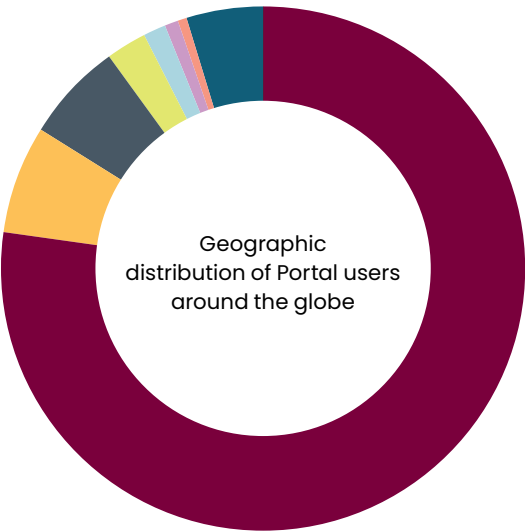
2024 Portal engagement

Canada (English & French)	77%	856,522
United States	7%	72,839
France	6%	69,070
Francophones - other countries	2%	26,844
United Kingdom	1%	16,257
India	1%	8,299
Australia	1%	6,175
Other countries	5%	50,740

Geographic distribution of Portal users around the globe

Total users: 1,106,746

McMaster OPTIMAL AGING PORTAL
mcmasteroptimalaging.org

McMaster University

Portal content as of 31 December 2024

- **500+** Blog posts
- **400+** Hitting the headlines news summaries
- **1,100** Evidence summaries
- **3,200** Web resource ratings
- **202** Patient decision aids
- **14** e-learning modules*
- **57** Video posts*
- **56,600+** Scientific articles for health- and social system professionals provided via direct feeds McMaster's best-in-class sources of best available (filtered and appraised) research evidence related to optimal aging, namely McMaster Premium LiteratUre Service (McMaster PLUS) for clinical questions, Health Evidence for public health questions, and Health Systems Evidence for health systems questions and Social Systems Evidence for social systems questions.
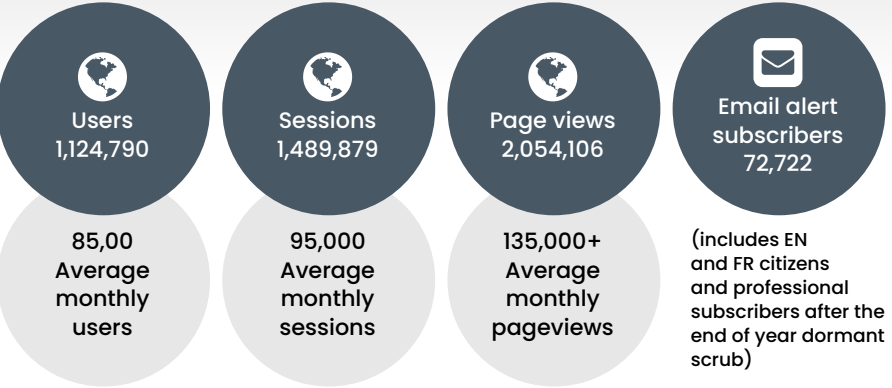
Portal content

		HEALTH	SOCIAL
CITIZEN CONTENT	Blog posts	326	176
	Evidence summaries	932	186
	Web resource ratings	2,000	1,200
	Patient decision aids	202	n/a
	Hitting the headlines	402	
	E-learning	14 modules, 57 video blogs	
PROFESSIONAL CONTENT	Clinician	49,555	n/a
	Public health professional	3,739	n/a
	Policymaker	3,060	320

During the year, the Portal continued to expand its catalogue of multimedia content with the publication of six new e-learning modules and 21 video posts featuring McMaster experts discussing a wide range of topics related to healthy aging. Over 28,100 people subscribed to the new email-based micro-learning series, bringing the total number of subscribers to these limited series to 42,000. User engagement and satisfaction with these new forms of content are very high, as evidenced by survey responses and engagement with features such as online quizzes and downloads of custom resources.
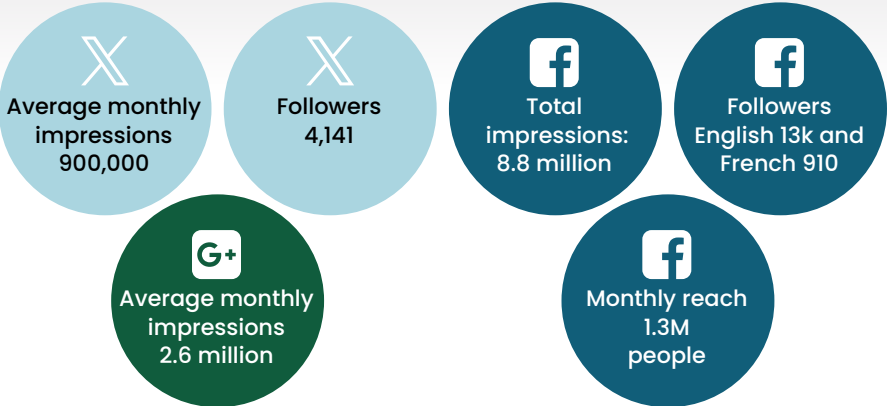
Statistics (October 1, 2023 – September 30, 2024)

YouTube video views **960,806** · YouTube hours watched **18,400** · YouTube impressions **960,906** · YouTube subscriptions **3,805** · Total e-learning views **49,347**

Website analytics for 2024 (January 1 to November 30 2023)

Users **1,124,790** · Sessions **1,489,879** · Page views **2,054,106** · Email alert subscribers **72,722**

85,00 Average monthly users · 95,000 Average monthly sessions · 135,000+ Average monthly pageviews · (includes EN and FR citizens and professional subscribers after the end of year dormant scrub)

Social media (January 1 to November 30 2024)

Average monthly impressions **900,000** · Followers **4,141** · Total impressions: **8.8 million** · Followers English 13k and French 910 · Average monthly impressions **2.6 million** · Monthly reach **1.3M people**

Sustainability | Efforts toward securing the long-term sustainability of the Portal continued during 2024.

During the calendar year 2024, additional contributions from McMaster University's Faculty of Health Sciences, the Provost, and the MIRA | Dixon Hall Centre, as well as allocations from The Isles Foundation trust fund, and from Suzanne Labarge's new gift for the Aging Brain project, were confirmed (under MIRA's leadership) to help support the Portal operations in 2024 and 2025. In addition, we confirmed a $100K grant from AGE-WELL to cover fiscal years 2024-25 and 2025-26.

We plan to continue our efforts to secure long-term funding to ensure financial sustainability and 'market' growth, while implementing innovations to make the Portal more enticing to a broader audience, all while ensuring that the Portal content and website remain independent and non-biased.

Partnering for **Real World Impact**

Partnerships are crucial to MIRA as they enhance our ability to conduct impactful aging research and implement practical solutions. By collaborating with diverse stakeholders, we expand our reach and influence across campus, locally, nationally, and globally, ensuring that our work benefits older adults everywhere.

In 2024, in addition to those featured below, MIRA engaged with a number of stakeholders for potential future collaborations, including (among others) Amplifon Foundation, Toyota Woven City, Heersink Institute for Biomedical Innovation, Hamilton Health Sciences, Research Institute at St. Joe's Hamilton and Move Mobility.

MIRA | Dixon Hall Centre

The **MIRA | Dixon Hall Centre**, established in April 2021, represents a unique partnership between the McMaster Institute for Research on Aging (MIRA) and Dixon Hall, a multi-service agency in Toronto's downtown East. As one of MIRA's **focused research centres**, this collaboration merges Dixon Hall's extensive experience in community-based client care with MIRA's innovative research on aging. By focusing on community engagement and multidisciplinary research, the Centre addresses the complex needs of older adults, particularly those marginalized by poverty, social injustices, and isolation. The Centre's mission is to create lasting, evidence-based solutions that enhance the physical and social well-being of equity-deserving older adults, ensuring that research is both relevant and impactful.

Fostering engagement: MIRA's role in supporting an **age-friendly Hamilton**

MIRA's ongoing partnership with the Hamilton Council on Aging and the City of Hamilton's Age-Friendly Cities office aims to ensure older adults in the greater Hamilton area can age well and stay engaged in meaningful activities and communities. MIRA actively participates in public events like community fairs and stakeholder consultations, staying connected with diverse groups of older adults.

During Seniors Month in June 2024, MIRA collaborated with the Hamilton Public Library to host listening and learning sessions. These sessions featured short lectures and provided opportunities for older adults to share their feedback and insights about research participation. Held across the city, these sessions allowed MIRA to hear from older adults in trusted, comfortable spaces.

MIRA continues to share information with participating library branches and the HPL's central communications, leading to increased public attendance at MIRA events.

MIRA announces **collaboration with Vyta— Powered by Bayshore HealthCare**

In 2024, MIRA partnered with Vyta - Powered by Bayshore HealthCare to enhance the accessibility of evidence-based information for older adults and their caregivers. This collaboration integrates the extensive content from the McMaster University Optimal Aging Portal into Vyta's innovative aging-in-place platform.

Key highlights of this collaboration include:

- Integration of nearly 1,000 pieces of evidence-based content, including articles, videos, and research summaries.
- Simplified care management through a convenient, one-stop resource for aging well.
- Ongoing generation of new content, with an average of 6-8 new articles per month.

This initiative underscores MIRA's commitment to translating research into practical solutions that directly benefit older adults. By combining our expert-validated content with Vyta's user-friendly platform, we are empowering older adults to make informed decisions about their health and well-being.

McMaster and MIRA | Dixon Hall Centre visited by representative of the **World Health Organization (WHO)**

In May 2024, Dr. Ritu Sadana, Head of the Aging and Health Unit at the World Health Organization (WHO), visited McMaster for a roundtable with MIRA executives and aging researchers from across campus.

Dr. Sadana was also invited to tour Dixon Hall facilities, travelling to the Centre in Toronto. The group toured Dixon Hall's facilities, engaging with staff and clients, and visited the St. James Town neighborhood. This tour included an introduction to the Dixon Hall Rooming House project and the drop-in lunch centre.

This visit underscores MIRA's significance on the global stage of aging research. By hosting international leaders like Dr. Sadana, MIRA demonstrates its commitment to fostering global partnerships that can enhance research and care for older adults. The discussions led by Dr. Raina with Dr. Sadana highlighted the potential for future collaborations, emphasizing MIRA's role in advancing aging research and its impact on a worldwide scale.

MIRA joins envisAGE: Pioneering innovation in **Canadian AgeTech**

In 2024, MIRA joined envisAGE, a pan-Canadian initiative co-led by AGE-WELL and MEDTEQ+. This initiative supports small and medium-sized enterprises (SMEs) in developing and validating technology solutions tailored to the needs of older adults. By providing funding and access to testing and demonstration sites within communities, envisAGE fosters leadership in the Canadian AgeTech market.

Over five years, envisAGE will invest $47 million from the Strategic Innovation Fund to support up to 100 collaborative AgeTech projects addressing the needs of older Canadians. The initiative supports triads comprising an SME, a community partner, and an academic subject matter expert, accelerating innovation in aging technology within Canada.

As one of envisAGE's "BeachHeads," MIRA is committed to collaborating with promising SMEs and their community partners. By applying rigorous evaluation to these solutions, MIRA aims to bring trusted, effective technologies to aging Canadians.

Partnering for Real World Impact

MIRA has developed a wide network of collaborators and partners who support our research, deepen our impact and widen our reach. These valued partnerships enhance the work of the Institute and further our common goals. We were proud to work with the following partners in 2024.

Partner logos: DIXON HALL, Newcastle University, University of Birmingham, AGE-WELL, Bayshore Home Health, envisAGE MEDTEQ AGE-WELL, Smart Mobility, McMaster Digital Transformation Research Centre, McMaster University Psychiatry & Behavioural Neurosciences, Michael G. DeGroote Institute for Pain Research and Care, The Firestone Institute for Respiratory Health, St. Joseph's Healthcare Hamilton, McMaster University, Bayshore Foundation, clsa élcv, Funded by the Government of Canada's New Horizons for Seniors Program, National Research Council Canada / Conseil national de recherches Canada, Hamilton Public Library, HCOA Hamilton Council on Aging, HUMBER, MROO Municipal Retirees Organization Ontario, National Innovation Centre Ageing, nhsa, SETU, St. Joseph's Health System Centre for Integrated Care, Thrive Group, Réseau Québécois de recherche sur le vieillissement / Fonds de recherche Québec, World Health Organization

President's Award | In 2024, the McMaster Institute for Research on Aging (MIRA) team was honoured to receive the McMaster President's Award for Outstanding Service. Awarded in a celebration in early May, each team member received a commemorative plaque memorializing their dedication and innovative work, and their group name was added to the university's permanent Roll of Honour. This recognition celebrated the agility of this small but mighty team, and inspired others within the university community to strive for excellence.

The MIRA team

Senior leadership

Parminder Raina
Scientific Director

Marla Beauchamp
Director,
MIRA | Dixon Hall Centre

Ine Wauben
Executive Director

MIRA team

Audrey Patocs
Research Manager

Sachi O'Hoski
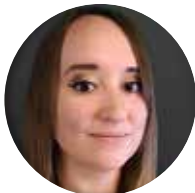*Scientific Operations Manager*
Mira | Dixon Hall Centre

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Afnan Abdelbaki
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Nikki Fudge
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Nadia Jamil
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McMaster University | Institute for Research on Aging | Labarge Centre for Mobility in Ageing | MIRA | Dixon Hall Centre | LABARGE Optimal Aging INITIATIVE

MIRA and Labarge

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