

High-impact
research
making
life better

 **Geras**

Centre for Aging Research

[jeh'ruhzh] noun - Greek for old age

2013-2023

www.gerascentre.ca



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We are grateful to the late Charles and Margaret Juravinski for the physical space for our centre.

A special thank you to the support of Hamilton Health Sciences Foundation, the Department of Medicine at McMaster University, the St. Peter's & McMaster Chair in Aging and MIRA for their partnership and collaboration.



GERAS BY THE NUMBERS

2013-2023

18 Leadership council

51 Geras members

77+ Research grants

154 Research trainees

1475 Journal articles

322 Presentations

35+ Partnerships

100 Media releases

WELCOME FROM THE DIRECTOR



CELEBRATING 10 YEARS!

HIGH-IMPACT GERIATRIC MEDICINE AND HEALTHY AGING RESEARCH

The Geras Centre for Aging Research celebrates ten years! Since day one, as the founder and executive director, we have been working hard towards our vision to enable people to age with dignity and independence. We have grown to become a CIHR Canadian Research Centre on Aging.

We are proud to have a highly distinguished leadership council of 18 clinician-scientists and a dedicated community of 53 members, who are steadfast in their pursuit to advance geriatric medicine & aging research.

Since our establishment in 2013, we have secured 77+ highly competitive research grants, formed partnerships with more than 35+ organizations, and provided training to 154 aspiring aging researchers. Our impact is evident through our numerous publications, including 1475 peer-reviewed manuscripts and 322 scientific conference presentations, and recognition through 100 media

releases on local & national platforms. The future looks bright. Thank you to each person who has believed in us, partnered with us, supported us financially, and promoted our work along the way. We look forward to continuing to work together.



Alexandra Papaioannou

Dr. Alexandra Papaioannou
BScN, MD, MSc, FRCP(C), FACP, FCGS
Executive Director, Geras Centre for Aging Research

RESEARCH ENVIRONMENT

COLLABORATION IN AGING RESEARCH

SYNERGIES IN AGING RESEARCH: COLLABORATION BETWEEN HHS AND MCMASTER UNIVERSITY

Research is a fundamental part of what we do at Hamilton Health Sciences. In partnership with McMaster University, Hamilton Health Sciences has a decades-long track record of making discoveries that change how healthcare is delivered around the world. Research at Hamilton Health Sciences happens across our many programs and services, and on varying scales.

Research is led by specialized research institutes. Hamilton Health Sciences research advances patient care by bringing evidence into practice through translation and application in to real-world environments. We are embedded

in both Hamilton Health Sciences and McMaster University ecosystems that contain research institutes, centres, and groups that encourage and support interdisciplinary research.

As the founder and Executive Director of the Geras Centre for Aging Research, Dr. Alexandra Papaioannou brings together world-leading researchers united under a singular vision to help people age with dignity and independence. Her leadership entails a coordinated and collaborative research agenda, fostering partnerships

between academics and clinicians across diverse faculties.

Geras research is supported by research grants and world-class infrastructure, including Canada's largest biobank and a family of research institutes, each with expertise in a unique area which collectively, covers the spectrum of health and disease.



Hamilton Health Sciences is ranked within the top 10 of Canada's Top 40 Research Hospitals. McMaster University is one of the top research-intensive research universities in Canada.

Geras research and innovation has been shared in 25 HHS Share Stories (2016 - Present)



BRAIN HEALTH FEATURED ARTICLE

FORMER HHS NURSE ADVOCATES FOR PEOPLE LIVING WITH DEMENTIA

"My career at HHS gave me the knowledge and ability to stand up, as a nurse and as a person living with this disease, to advocate for change." - Phyllis Fehr, a passionate advocate for people living with dementia.



BONE HEALTH FEATURED ARTICLE

PREVENTING FRACTURES FOR AN AGING POPULATION

"With FRS [Fracture Risk Scale] we can begin to anticipate risk before a fracture occurs and focus on treating those at high risk." - Dr. Sid Feldman, the Executive Medical Director at Baycrest Health Sciences.



RESILIENCE & FRAILITY FEATURED ARTICLE

STUDY AIMS TO HELP OLDER ADULTS AGE IN PLACE

"The classes really helped me to improve my balance," she says. "My energy level is much higher too." - Pam Edgcumbe, a Binbrook resident with the goal of living independently.



INNOVATION AND TECHNOLOGY FEATURED ARTICLE

HHS GERAS CO-DESIGNS A 'SMART' HOSPITAL BED

"The Aply partnership is testimony to Geras' leadership in research and innovation." - Ted Scott, the Vice President of Research and Chief Innovation Officer for Hamilton Health Sciences.

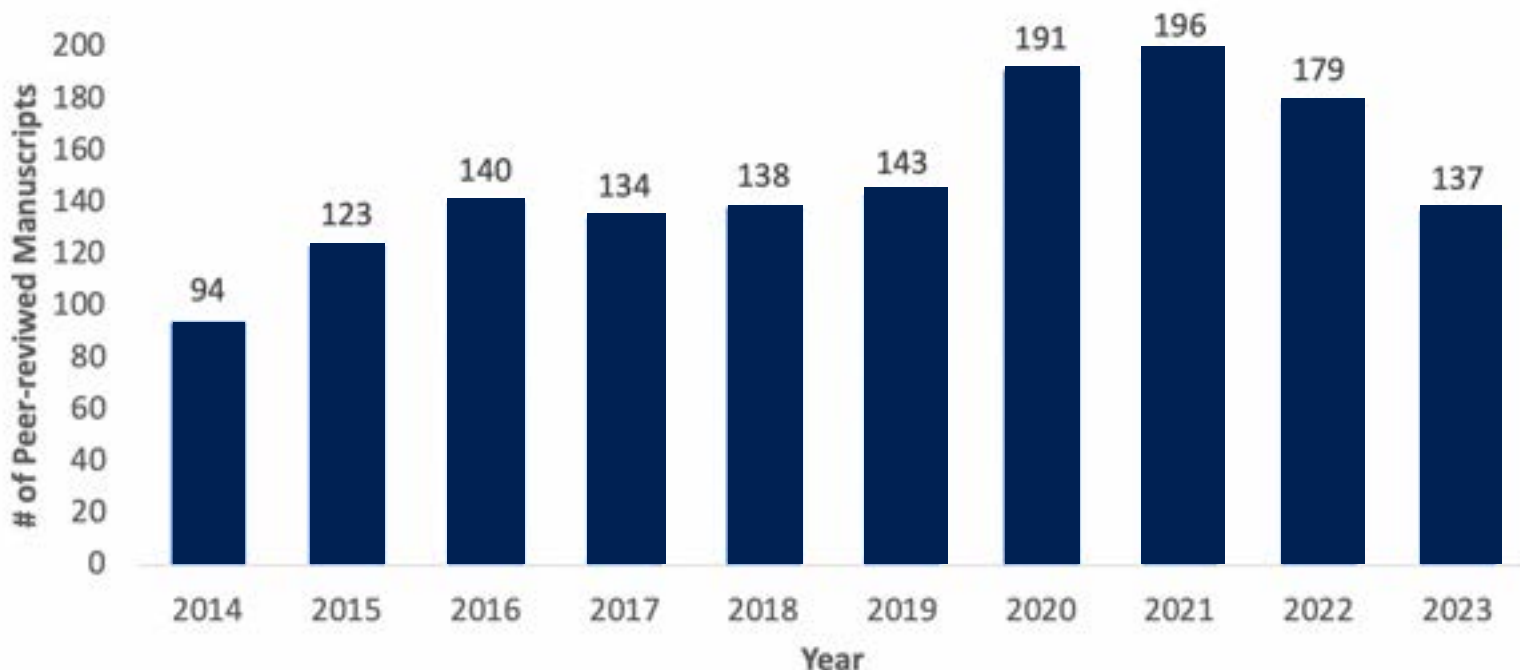
STRATEGIC PLAN 2023-2027

Mission	To make life better for older adults with high impact research tackling the biggest challenges facing our aging population	
Vision	Promoting healthy aging for people to age with dignity and independence	
Strategic Directions	Research Excellence	Advancing research innovations, new models of geriatric care, and clinical interventions
	Collaboration	Collaboration among healthcare professionals, researchers, older adults, and caregivers
	Training	Training the next generation of leaders in aging research
Values	Leadership; Innovation; Caring; Communication; Participation	



High-impact research making life better

Peer-reviewed manuscripts in brain health, bone health resilience & frailty, and innovation & technology



High-impact
research making
life better

Leading in brain health, bone health, resilience & frailty, and innovation & technology



4,000+ monthly website visitors discover our research, innovation, and education

RESEARCH EXCELLENCE

NEW STRATEGIC DIRECTIONS AND WEBSITE WERE LAUNCHED DURING SENIORS MONTH IN JUNE 2023

With a strong commitment to advancing geriatric medicine and healthy aging research, we have updated our strategic plan for 2023-2027 to make life better for older adults with high-impact research tackling the biggest challenges facing our aging population with a specific focus on multi-complexity in brain health, bone health, frailty, and technology. Our new strategic directions include (1) **research excellence** advancing research innovations, new models of geriatric care, and clinical interventions, (2) **collaboration** among healthcare professionals, researchers, older adults, and caregivers, and (3) **training the next generation** of leaders in aging research.

aimed at addressing critical challenges within the aging demographic. Renowned for our practical studies across **brain health, bone health, resilience & frailty, and innovative technology**, our platform invites exploration of ongoing studies open for participation. Access our up-to-date database showcasing

peer-reviewed publications authored by our clinician-scientists. Moreover, discover **evidence-based courses** and certificate programs tailored to support dignified and independent aging, catering to academic and professional audiences seeking specialized knowledge in the field of geriatrics.



Dr. Ahmed Negm with patient partners



Dr. Courtney Kennedy and Dr. George Ioannidis with the late Charles Juravinski

OUR MEMBERSHIP

EXEMPLIFYING ACADEMIC EXCELLENCE: SEVEN RESEARCH CHAIRS

The Geras Centre for Aging Research proudly has seven research chairs, showcasing academic excellence. Each chairholders' collective efforts signify a commitment to the advancements that enhance our understanding and treatment of aging-related issues, fostering a brighter and healthier future for older adults.

Dr. Alexandra Papaioannou

Canada Research Chair in Geriatric Medicine and Healthy Aging (Tier 1)

Dr. Jonathan Adachi

Endowed Research Chair
Actavis Chair in Rheumatology for Better Bone Health

Dr. Joanne Ho

Schlegel Chair in Geriatric Pharmacotherapy
Schlegel-UW Research Institute for Aging

Dr. Sharon Kaasalainen

Gladys Sharpe Chair in Nursing, School of Nursing, Faculty of Health Sciences

Dr. Nader Khalidi

Endowed Research Chair
Abbvie Chair in Education in Rheumatology,
Vasculitis Fellowship Program Director

Dr. Arthur Lau

Endowed Research Chair
Actavis Chair in Rheumatology

Dr. Anthony Levinson

Endowed Research Chair
John. R. Evans Chair in Health Sciences
Educational Research & Instructional Development

Dr. Joye St. Onge

Division Director of Geriatric Medicine
St. Peter's Hospital/McMaster Chair in Aging

RESEARCH EXCELLENCE

CANADIAN RESEARCH CENTRE

We are a CIHR Canadian Research Centre on Aging involved in a community of researchers, scientists, students, community groups, policymakers and individuals from Canada and around the world that share an interest in the field of research on aging.



OUR ADVISORY BOARD



Leslie Gillies



Dr. Marc Jeschke



Dr. John Kelton



Dr. Sharon Marr

Providing scientific and strategic direction, and guidance to the leadership committee at the Geras Centre for Aging Research.



Keith Monrose



Dr. Ted Scott



Pearl Veenema

LEADERSHIP: RESEARCH OPERATIONS



**Dr. Alexandra
Papaioannou**

Executive
Director



**Dr. George
Ioannidis**

Deputy
Director



**Dr. Patricia
Hewston**

Operations
Director



**Sherri
Smith**

Executive
Assistant



**Dr. Justin
Lee**

Clinical Trials
Lead



**Dr. Courtney
Kennedy**

Knowledge
Translation Lead



**Dr. Mimi
Wang**

Equity, Diversity,
& Inclusion Lead

RESEARCH EXCELLENCE

DRIVING RESEARCH EXCELLENCE: LEADERSHIP ROLES AT GERAS CENTRE FOR AGING RESEARCH

The Geras Centre for Aging Research operates with a dedicated team, each member contributing their expertise and leadership towards the advancement of aging research and the promotion of inclusive and equitable practices.

The following roles represent our organizational structure: 1. **Executive Director:** The Executive Director oversees the strategic direction of the center, ensuring alignment with the mission and objectives. This role involves fostering collaborations, securing funding, and maintaining the overall integrity and effectiveness of the research conducted.

2. **Deputy Director:** Supporting the Executive Director, the Deputy Director plays a crucial role in managing research activities, and facilitating interdepartmental communication to drive the centre's mission forward scheduling, and coordination of activities,

3. **Operations Director:** Responsible for the efficiency of administrative tasks and scientific support to enable the smooth operation of grants and research activities.

4. **Executive Assistant:** Providing essential administrative support to the leadership team, financial support and coordination of activities, contributing to the efficient functioning of the center.

5. **Clinical Trials Lead:** Tasked with overseeing clinical trial activities, ensuring adherence to regulatory

requirements and ethical standards.

6. **Knowledge Mobilization Lead:** Bridging the gap between research and practical application to ensure that research findings are effectively disseminated and implemented.

7. **Equity, Diversity, & Inclusion Lead:** Emphasizing inclusivity and equity, this role is pivotal in championing diversity initiatives within the center ensuring that research, policies, and practices reflect diverse perspectives and the needs of all communities.



LEADERSHIP COUNCIL

Geras Leadership Council comprises visionary experts and thought leaders leading the way with high-impact research tackling the biggest challenges facing our aging population.



Dr. Jonathan Adachi



Dr. Esther Coker



Dr. David Cowan



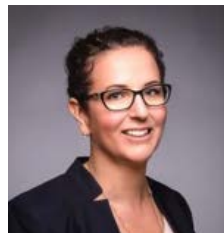
Dr. Patricia Hewston



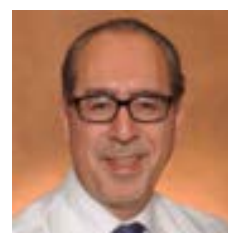
Dr. George Ioannidis



Dr. Sharon Kaasalainen



Dr. Courtney Kennedy



Dr. Nader Khalidi



Dr. Arthur Lau



Dr. Justin Lee



Dr. Anthony J Levinson



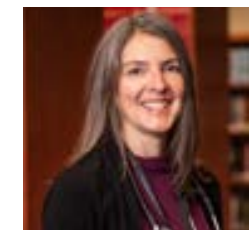
Dr. Caitlin McArthur



Dr. Alexandra Papaioannou



Danielle Petrucelli



Dr. Joye St. Onge



Dr. Lehana Thabane



Dr. Sam Thrall



Dr. Mimi Wang

RESEARCH STAFF

Our dedicated research staff is responsible for the day-to-day management of studies as an integrated whole to innovate and support clinical research.



Anvi Desai
BSc
Research Assistant



Dawn Elston
BA, MA
Research Assistant



Lauren Kane
BSc, MSc
Clinical Research Coordinator



Loretta Hillier
MA, CE
Project Manager



Caroline Marr
BSc
Research Assistant (PT)



Jennifer Payne
Administrative Assistant (PT)



Karen Thompson
BA, MA
Clinical Research Coordinator



Jessica Belgrave Sookhoo
BSc, CCRC
Research Coordinator



Sigrid Vinson
RN, CCRA
Clinical Trials Nurse (PT)



DIVISION OF GERIATRIC MEDICINE

The Division of Geriatric Medicine is dedicated to providing compassionate evidence-based and sustainable specialized geriatric care.



Dr. Ziyada Al-Khateeb



Dr. Cheryl Allaby



Dr. Anne Braun



Dr. David Cowan



Dr. Michelle Gagnon



Dr. George Ioannidis



Dr. Joanne Ho



Dr. Patrick Jung



Dr. Sabina Keen



Dr. Courtney Kennedy



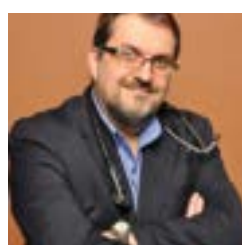
Dr. Justin Lee



Dr. Heather McLeod



Dr. Amy Miles



Dr. Brian Misiaszek



Dr. Mihaela Nicula



Dr. Amra Noor



Dr. Christopher Patterson



Dr. Alexandra Papaioannou



Dr. Joye St. Onge



Dr. Mona Sidhu



Dr. Sam Thrall



Dr. Irene Turpie



Dr. Mimi Wang



Dr. Tricia Woo

DIVISION OF RHEUMATOLOGY

The Division of Rheumatology is dedicated to providing compassionate evidence-based and specialized rheumatology care.



Dr. Jonathan Adachi



Dr. Michelle Batthish



Dr. Raja Bobba



Dr. Pauline Boulos



Dr. Alfred Cividino



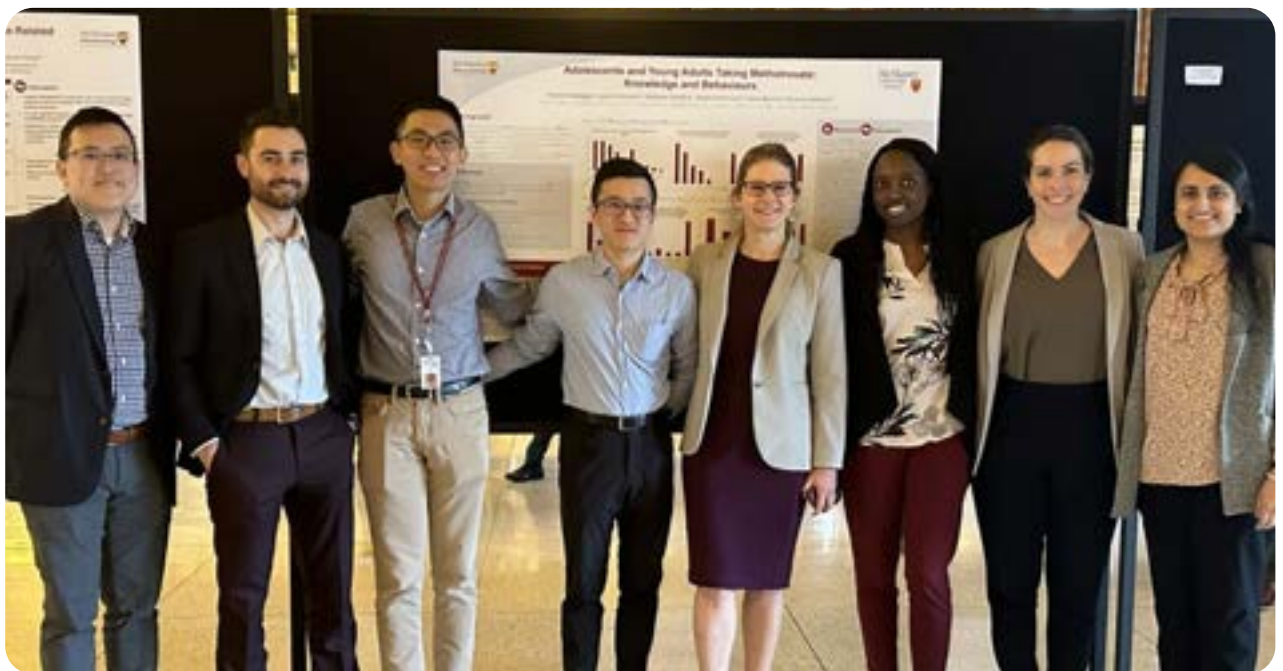
Dr. George Ioannidis



Dr. Nader Khalidi



Dr. Faiza Khokhar



McMaster Division of Rheumatology featured at the 34th Annual McMaster Department of Medicine Research Excellence and Discovery Day



Dr. Tselios Konstantinos



Dr. Margaret Larche



Dr. Arthur Lau



Dr. Kim Legault



Dr. Mark Matsos



Dr. Alexandra Papaioannou

TRAINING THE NEXT GENERATION



Dr. Jenna Gibbs

Assistant Professor,
McGill University



Dr. Afeez Hazzan

Assistant Professor,
State University of New
York



Dr. Patricia Hewston

Geras Operations &
Assistant Clinical
Professor, McMaster



Dr. Caitlin McArthur

Assistant Professor,
Dalhousie University



Dr. Janet Pritchard

Assistant Professor,
McMaster University



Dr. Isabel B Rodrigues

Postdoctoral Fellow,
University of Manitoba



Dr. Olga Gajic Veljanoski

Senior Health Economist,
Ontario Health

TRAINING THE NEXT GENERATION

TRAINING FROM HEALTH RESEARCH METHODOLOGY TO REHABILITATION TO ADVANCE GERIATRIC CARE

We are committed to providing trainees and early-career researchers with innovative research, mentoring and training opportunities within our geriatric medicine research program. We lead a multidisciplinary research team at the Geras Centre for Aging Research ranging from undergraduate students to post-doctoral fellows and all faculty levels from junior to senior scientists. Our research trainees have secured national scholarship funding and continue to lead successful careers in geriatric medicine, nursing, rehabilitation science, kinesiology, and health research methods.

Our trainees are actively involved in national training programs: **McMaster Institute for Research in Aging (MIRA)** to transform the experience of aging by transforming the science of aging with cross-faculty research collaboration.

Natural Science and Research Council Canada (NSERC) sMAP CREATE training program is a multi-university, multidisciplinary program centered around technologies and best practices for smart mobility for the aging population. **CAN-TAP-TALENT** training program aims to enhance Canada's clinical trials training pipeline by establishing a national platform that structures research training and mentorship.

Canada's technology and aging network at AGE-WELL training and mentorship program to train innovators of tomorrow as they accelerate the delivery of technology-based solutions to make a meaningful difference to the lives of Canadians. **Canadian Geriatrics Society Mentorship** to connect with trainees with experienced clinicians to provide guidance towards a career in geriatric medicine.



SPOTLIGHT ON RESEARCH TRAINEES



Hajar Abu Alrob
PhD Candidate
2020 - Present



Chinenye Okpara
PhD Candidate
2019 - Present



Ahreum Lee
PhD Candidate
2018 - Present



Dr. Sayem Borhan
PhD
2018 - 2020



Dr. Pamela Durepos
PhD
2016 - 2020



Dr. Ahmed Negm
PhD
2013 - 2018



Aastha Relan
MSc Student
2023 - Present



Ashlee Azizudin
MSc Student
2022 - Present



Momina Abbas
MSc Student
2022 - Present



Konrad Grala
MSc Student
2020 - Present



Cindy Steel
MSc
2015 - 2018



Sarah Karampatos
MSc
2014 - 2016



Terri Ng
Co-op Student
2023 - Present



Ann Zhang
Co-op Student
2023



Rachel Swance
Co-op Student
2023

*Training the next generation of
leaders in aging research from
engineering to
health sciences*



Ali Dashti
Co-op Student
2022



Yun Bo Xi
Co-op Student
2020



Maiura Muralitharan
Co-op Student
2019



Mateen Noori
Co-op Student
2019



Milothy Parthipan
Co-op Student
2019



Alicia Hanman
Co-op Student
2018



Antonia Tykei
Co-op Student
2018



Erin Haney
Co-op Student
2017



**Yulika Yoshida-
Montezuma**
Co-op Student 2017



Lavan Sivarajah
Co-op Student
2017



Michelle Mooneser
Co-op Student
2017



Claudia Yousif
Co-op Student
2016

RESEARCH IN BRAIN HEALTH



RESEARCH EXCELLENCE

DANCING FOR BRAIN HEALTH AND MOBILITY ACROSS CANADA

Brain health is more than just the absence of disease. A healthy brain is capable of learning, recalling, and planning tasks. Our research helps to understand how we can optimize brain health as we age.

GERAS DANCE was developed with rehabilitation and geriatric medicine expertise at the Geras Centre for Aging Research at Hamilton Health Sciences and McMaster University in partnership with the YMCA of Hamilton Burlington Brantford. GERAS DANCE provides a fun way for older adults to exercise regularly, incorporating scientific principles of neuroplasticity, motor learning and dual-task training. The program uses functional exercises to help build strength and mobility to allow older adults to participate in everyday activities, such as climbing the stairs and walking around the block.

GERAS DANCE has an evidence-based curriculum from prevention

to rehabilitation. Classes can be delivered in-person, virtually live-streamed, or an on-demand video series. With research on 750+ older adults (aged 60-92 years), we continue to expand the program to help improve the brain health and mobility of older adults across Canada

BY THE NUMBERS

750+ older adults
40 sites across
5 provinces
32 media releases
22 scientific presentations
5 peer-reviewed manuscripts



EMPOWERING DEMENTIA-FRIENDLY COMMUNITIES ACROSS CANADA

This project is intended for people living with dementia and their care partners, and the broader community. A Dementia-Friendly Community is a place where people living with dementia are understood, respected and supported; an environment where people living with dementia will be confident that they can contribute to community life. The development of dementia friendly communities helps reduce stigma and create inclusive environments. A newly funded grant with the Public Health Agency of

Canada (PHAC) will encourage partnerships with healthcare providers, promote multi-sectoral collaboration, and underscore cultural sensitivity including Indigenous organizations within First Nations, Inuit, or Métis communities. Understanding the cultural contexts of populations is an essential element in designing and delivering culturally sensitive community-based programs. Cultural contexts and values have a strong influence on health-related behaviours.



Comprehensive Assessment of Neurodegeneration and Dementia (COMPASS-ND) is the signature clinical study of the CCNA. The goals of this study include learning about who is at risk for developing dementia and determining the most effective methods of detecting dementia. Geras is a local site for the study.



IGERICARE PHAC-FUNDED RCT

Dr. Anthony Levinson has been awarded nearly \$400,000 in federal funding for a project to educate Canadians about preventing dementia. Phase 1 of Levinson's work, currently underway, is a randomized controlled trial of a web-based intervention consisting of a 30-minute e-learning lesson about dementia risk reduction and a series of educational emails over 4-weeks.

RESEARCH IN BONE HEALTH



RESEARCH EXCELLENCE

CIHR-FUNDED FRACTURE PREVENTION MODEL FOR LTC

Hip fractures occur nearly twice as often for older adults residing in long-term care (LTC) as they do in older adults of a similar age still living in other settings. Hip fractures are the leading cause of hospitalization and often result in loss of independence, problems with walking and sometimes death. PREVENT uses the Fracture Risk

Scale to capture residents' who are most at risk of fracture due to osteoporosis and falls and will implement the 2015 fracture prevention recommendations in LTC. The study will examine if this model is effective in decreasing hip fractures by comparing the results between LTC homes assigned to the control (usual

care) and intervention (PREVENT model) groups. To address this problem, the PREVENT Trial: a pragmatic cluster randomized controlled trial of a multifaceted fracture prevention model for long-term care (ClinicalTrials.gov - NCT04947722), funded by CIHR, was designed to implement the PREVENT model for use in LTC homes.

OSTEOPOROSIS CLINICAL PRACTICE GUIDELINES

The 2023 clinical practice guideline is an update of the 2010 Osteoporosis Canada guideline on the diagnosis and management of osteoporosis in Canada led by Dr. Alexandra Papaioannou (citations: 1339+). The new guideline has 25 key recommendations and 10 good practice statements emphasizing exercise, nutrition, fracture risk assessment, treatment & interventions.





GerasPREP

Geras PREVENT Research Education Portal

We are getting ready to launch our new research education portal as a part of the PREVENT randomized controlled trial. This portal will be used by healthcare providers providing them with access to resources pertaining to the Fracture Risk Scale, falls and fracture prevention and many additional resources within the long-term care sector. The portal houses all PREVENT study-related materials to provide healthcare providers with an easily accessed online portal that each LTC home can access with their own unique username and password.



	LOW RISK			HIGH RISK				
FRACTURE RISK SCALE	1	2	3	4	5	6	7	8
% HIP FRACTURE	0.6%	1.8%	2.5%	3.1%	5.0%	6.8%	7.8%	12.6%
% LTC RESIDENTS AT FRACTURE RISK	13.5%	18.3%	24.1%	17.0%	16.6%	2.1%	8.0%	0.5%
CHARACTERISTICS OF RESIDENTS	<ul style="list-style-type: none"> Able to walk independently in the corridor AND BMI > 30 <p>OR</p> <ul style="list-style-type: none"> Unable to walk independently in the corridor AND have had no falls in the past 30 days 			<ul style="list-style-type: none"> Able to walk independently in the corridor AND BMI between 18 to 30 AND one of the following: Prior fall, prior fracture, cognitive impairment (CPS 3 to 6), tendency to wander, age > 85 <p>OR</p> <ul style="list-style-type: none"> Unable to walk independently in the corridor AND had a fall in the past 30 days <p>OR</p> <ul style="list-style-type: none"> Able to walk independently in the corridor AND BMI < 18 with or without a fall 				

The Geras Centre led the development of the Fracture Risk Scale (FRS), an evidence-based tool for assessing fracture risk in LTC residents embedded in GerasPREP. The FRS is currently available in 1200 LTC homes across Canada.



RESEARCH IN RESILIENCE & FRAILITY



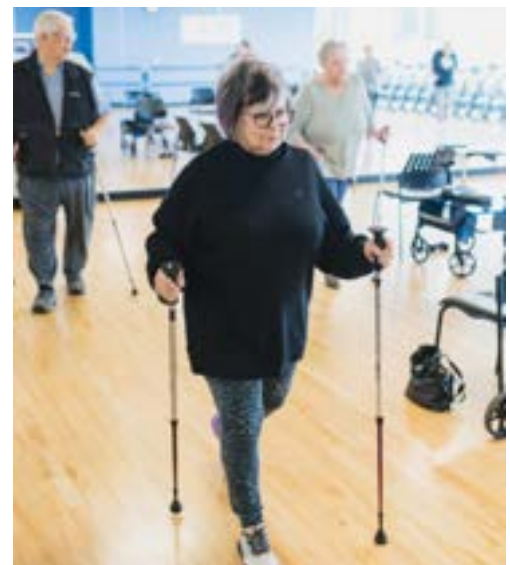
RESEARCH EXCELLENCE

FIRST CANADIAN CIHR-FUNDED RCT IN FRAILITY REHABILITATION

Frailty is a medical condition of reduced function and health in older adults. Physical inactivity, poor nutrition, and social isolation, and multiple medications contribute to frailty. When you are frail, the body has less resilience to bounce back from illness. We are leading in new models of geriatric care and clinical interventions.

The Geras Centre is leading the first Canadian trial in frailty rehabilitation (ClinicalTrials.gov - NCT03824106). This randomized control trial (RCT) is for community-dwelling older adults (aged 65+) with frailty and at high risk for mobility disability. To address the immediate impact of COVID-19 restrictions, our team quickly mobilized in-person rehabilitation services (medication support, exercise, nutrition, socialization) to be delivered remotely at home to build resilience in seniors (ClinicalTrials.gov - NCT04500366).

The primary objective of the OPTIMAL Fitness study is to determine if a 4-month intervention improves physical function compared with control and exercise alone in community-dwelling older adults living with frailty and sarcopenia.



OPTIMAL Fitness participants walking with activator poles



CIHR-FUNDED RCT GETTING FIT FOR HIP AND KNEE REPLACEMENT

We are revolutionizing rehabilitation before surgery to improve post-surgical outcomes with the first Canadian RCT to evaluate the clinical effectiveness of a multimodal frailty reduction intervention before surgery to improve post-surgical outcomes following joint replacement surgery (ClinicalTrials.gov - NCT05100966).

The primary focus is to assess physical performance using the Short Physical Performance Battery (SPPB), encompassing tests like walking speed, chair rise, and standing balance. Higher scores indicate lower levels of frailty within the range of 0-12. This study promises improved mobility and potentially transformative approaches to rehabilitation for older adults, ensuring a healthier and more resilient aging population. If successful, this study can inform a new model of pre-surgical rehabilitation care for older adults to be implemented across arthroplasty sites in Canada.



The Canadian Longitudinal Study on Aging (CLSA) is a large, national, long-term study of 50,000 individuals who are between the ages of 45 and 85 when recruited, for at least 20 years. Ahreum Lee, a PhD candidate at the Geras Centre and trainee on our CIHR CLSA falls and fractures catalyst grant, is using data from the CLSA comprehensive cohort to explore the association between cognition, frailty, and falls, and self-reported incident fractures which can help inform fracture risk assessment tools.



ENHANCING GERIATRIC CARE

Meeting the complex healthcare needs of a growing older adult population poses challenges for hospitals and emergency departments. Hospital environments often trigger or worsen geriatric syndromes, leading to adverse outcomes like hospitalization-associated disability. To improve outcomes, hospitals and EDs are urged to better accommodate older adults' diverse needs. Studies show non-drug interventions, like orientation, activities, and mobilization, can significantly reduce delirium, falls, and functional decline by 40-50%. One strategy is using standardized mobile comfort carts with low-cost resources to address patient needs associated with delirium or dementia in a study led by new investigator Dr. Justin Lee. .

INNOVATION & TECHNOLOGY



RESEARCH EXCELLENCE

MOVING EVIDENCE INTO PRACTICE WITH TECHNOLOGY

The Fit-Frailty App was developed at the Geras Centre for Aging Research by Dr. Courtney Kennedy, Dr. George Ioannidis, Dr. Alexandra Papaioannou, and Dr. Jonathan (Rick) Adachi in partnership with Dr. Kenneth Rockwood and the Geriatric Medicine Research Group at Dalhousie University. The project team worked with patients, families, and front-line clinicians to learn more about their experiences using this new technology and test it in healthcare settings.

The Fit-Frailty App is a comprehensive measure of frailty that incorporates disease-related, physical, cognitive, psychosocial, nutritional, and functional aspects. It was designed to streamline frailty assessment and be quickly completed with older adults and caregivers. The full, interactive assessment is completed in person

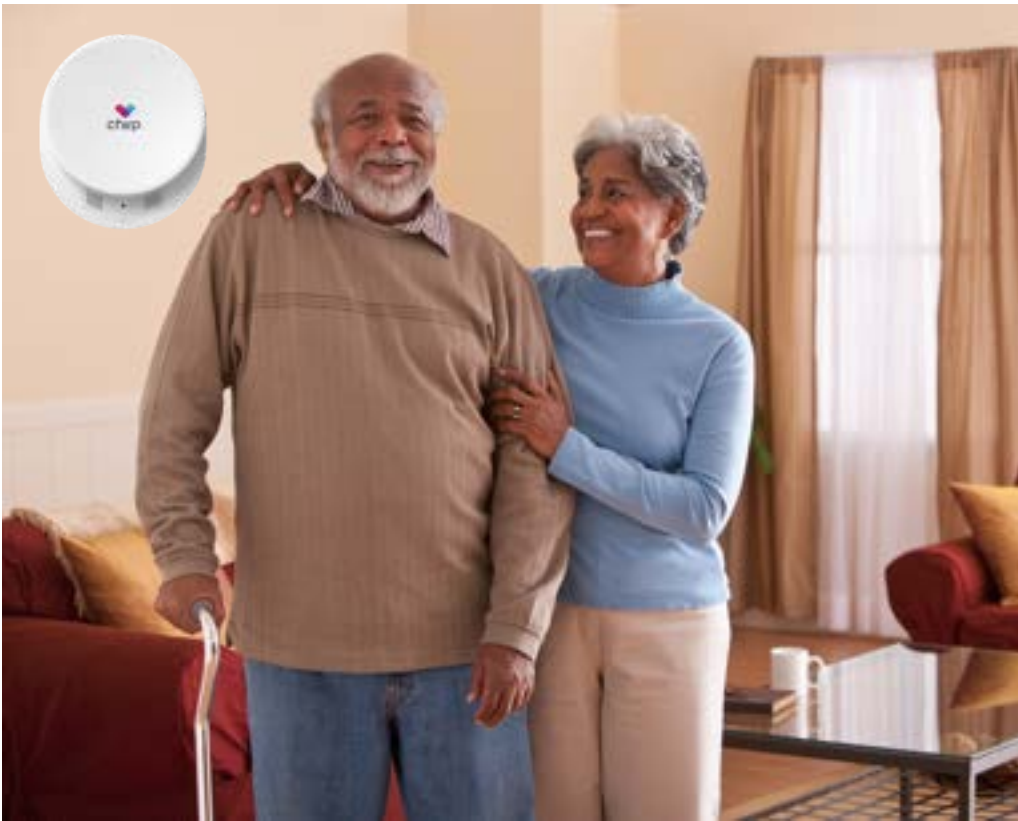
and includes physical performance measures. A virtual version has also been validated that is entirely self-reported and uses proxies for physical performance measures.



iOS

Download the
App Now





CHIRP TECHNOLOGY TO AGE IN PLACE

In a groundbreaking partnership, Hamilton Health Sciences and Chirp, an innovative technology company, have joined forces to transform home monitoring for older adults. The collaboration aims to enhance safety, independence, and peace of mind for seniors and their caregivers.

Chirp, known for its cutting-edge in-home monitoring device, combines privacy-preserving radar sensors with advanced AI algorithms. This state-of-the-art technology detects changes in mobility and predicts falls, all without the need for wearables or buttons. The result? A dignified and convenient approach to home monitoring that empowers older adults to live independently while providing caregivers with real-time insights.



NEW MOBILITY AIDS

The Geras Centre for Aging Research partnered with ORCHIDLift to test drive their innovation. ORCHIDLift is a manual all-in-one mobility assist device. It will enable caregivers to lift and transport care recipients/loved ones who lack the strength or mobility to stand. It is an adaptive modular design that can be used for multiple tasks including lifting, transferring, exercise and rehabilitation.



CO-DESIGNING A “SMART” BED

Hospital beds are where patients spend most of their time during the treatment and recovery stages of their hospital stays. The Geras Centre for Aging Research, in partnership with Aibly Medical, a Norwegian medical innovation company, is redefining the hospital bed from the ground up. The bed has sensors and is designed to model the human spine to assist with patient transfers.

OUR IMPACT: HIGHLIGHTED ARTICLES



Meta-Analysis > *Age Ageing*. 2021 Jun 28;50(4):1084-1092. doi: 10.1093/ageing/afaa270.

Effects of dance on cognitive function in older adults: a systematic review and meta-analysis

Patricia Hewston^{1,2}, Courtney Clare Kennedy^{1,2}, Sayem Borhan^{3,4}, Dafna Merom⁵, Pasqualina Santaguida⁶, George Ioannidis^{1,2}, Sharon Marr^{1,2}, Nancy Santesso³, Lehana Thabane^{3,6}, Steven Bray⁷, Alexandra Papaioannou^{1,2,3}



JGIM Plus. 2022 Oct; 6(10): e10679.

Published online 2022 Sep 26. doi: 10.1002/jgim.10679

PMCID: PMC9549720

PMD: 38248272

Association Among Cognition, Frailty, and Falls and Self-Reported Incident Fractures: Results From the Canadian Longitudinal Study on Aging (CLSA)

Alreum Lee,^{1,2} Caitlin McArthur,^{1,3} George Ioannidis,^{1,2} Jonathan D. Adachi,² Lauren E. Griffith,^{2,4} Lehana Thabane,² Lora Giangregorio,^{6,4} Suzanne N. Morin,⁷ William D. Leslie,⁸ Justin Lee,² and Alexandra Papaioannou^{2,1,2}

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The Geras virtual frailty rehabilitation program to build resilience in older adults with frailty during COVID-19: a randomized feasibility trial

Chinyere Okpara¹, George Ioannidis, Lehana Thabane, Jonathan Derrick Adachi, Alexander Rabinovich, Patricia Hewston, Alreum Lee, Caitlin McArthur, Courtney Kennedy, Tricia Woo, Pauline Boulos, Raja Bobba, Mimi Wang, Samuel Thrall, Dorelie Mangin, Sharon Marr, David Armstrong, Christopher Patterson, Steven Bray, Kerstin de Wit, Shyam Maharaj, Brian Misiaszek, Jessica Belgrave Sookhoo, Karen Thompson & Alexandra Papaioannou



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Development and validation of the Fracture Risk Scale (FRS) that predicts fracture over a 1-year time period in institutionalised frail older people living in Canada: an electronic record-linked longitudinal cohort study

George Ioannidis^{1,2}, Micaela Jantzi³, Jenn Bucek³, Jonathan D Adachi^{1,2}, Lora Giangregorio⁴, John Hindes³, Laura Pickard^{1,2}, Alexandra Papaioannou^{1,2}



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Management of Frailty: A Systematic Review and Network Meta-analysis of Randomized Controlled Trials

Ahmed M Negm¹, Courtney C Kennedy², Lehana Thabane³, Areti-Angeliki Veroniki⁴, Jonathan D Adachi⁵, Julie Richardson⁶, Ian D Cameron⁷, Aidan Giangregorio⁸, Maria Petropoulou⁹, Saad M Alsaad⁹, Jamaan Alzahrani¹⁰, Muhammad Maaz¹¹, Muhammad M Ahmed¹¹, Eileen Kim¹¹, Hadi Tehfe¹¹, Robert Dima¹², Kalyani Sbarbarayagam¹¹, Patricia Hewston², Hajar Abu Altob³, Alexandra Papaioannou¹³



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Barriers and Facilitators to Implementing Web-Based Dementia Caregiver Education From the Clinician's Perspective: Qualitative Study

Anthony J Levinson ¹, Stephanie Ayers ¹, Lianna Butler ¹, Alexandra Papaioannou ², Sharon Marr ², Richard Szymanko ²

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PMID: 33006563 PMCID: PMC7568210 DOI: 10.2196/21264



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Barriers and facilitators to implementing evidence-based guidelines in long-term care: a qualitative evidence synthesis

Caitlin McArthur ¹, Yuxin Bai ¹, Patricia Hewston ¹, Lora Giangregorio ¹, Sharon Straus ¹, & Alexandra Papaioannou

Implementation Science. 16. Article number: 70 (2021) | [Cite this article](#)

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The Short Performance Physical Battery Is Associated with One-Year Emergency Department Visits and Hospitalization

Ahmed M Negrn ^{1, 2}, Courtney C Kennedy ^{1, 3}, Janet M Pritchard ^{1, 4}, George Ioannidis ^{1, 3}, Vasilia Vastis ¹, Sharon Marr ^{1, 2}, Christopher Patterson ^{1, 2}, Brian Misiaszek ^{1, 3}, Tricia K W Woo ^{1, 3}, Lehana Thabane ⁵, Alexandra Papaioannou ^{1, 3}



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Preventing Fractures in Long-Term Care: Translating Recommendations to Clinical Practice

Alexandra Papaioannou ¹, George Ioannidis ², Caitlin McArthur ³, Loretta M Hillier ³, Sid Feldman ⁴, Lora Giangregorio ⁵, Susan Jaglal ⁶, Ravi Jain ⁷, Mary-Lou Van der Horst ⁸, Jonathan Adachi ⁸

Affiliations + expand
PMID: 32800745 DOI: 10.1016/j.jama.2020.07.003



> *Arch Osteoporos*. 2022 Feb 4;17(1):31. doi: 10.1007/s11657-022-01073-1.

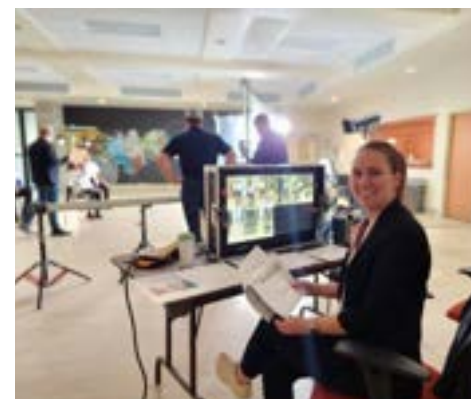
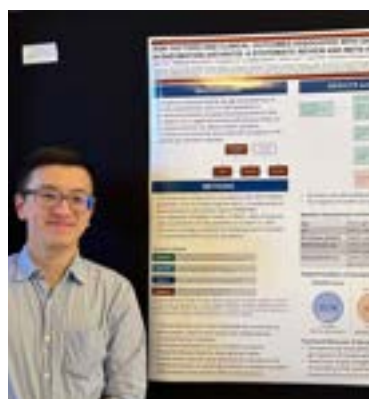
An update of the prevalence of osteoporosis, fracture risk factors, and medication use among community-dwelling older adults: results from the Canadian Longitudinal Study on Aging (CLSA)

Caitlin McArthur ^{1, 2}, Ahreum Lee ^{3, 4}, Hajar Abu Alob ^{3, 4}, Jonathan D Adachi ^{3, 4}, Lora Giangregorio ^{5, 6}, Lauren E Griffith ^{4, 7}, Suzanne Morin ⁸, Lehana Thabane ⁴, George Ioannidis ^{3, 4}, Justin Lee ^{3, 4}, William D Leslie ⁹, Alexandra Papaioannou ^{3, 4}

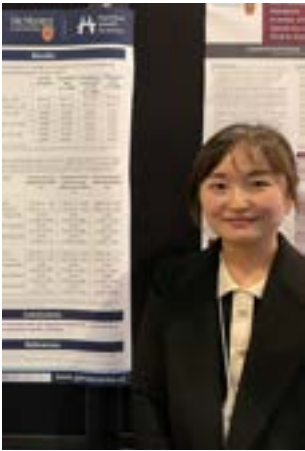
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- YMCA of Hamilton, Burlington & Brantford
- The Alzheimer Society of Brant, Haldimand Norfolk, Hamilton, Halton
- Hamilton Council on Aging
- Ontario Association of Resident Councils
- Ontario College of Family Physicians
- RIA (Schlegel – UW Research Institute for Aging)

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- AGE-WELL
- Canadian Frailty Network
- Canadian Geriatrics Society
- Canadian Longitudinal Study on Aging
- Centre for Aging + Brain Health Innovation
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- Osteoporosis Canada

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Special thanks to the institutes, government, and industry partners, both nationally and internationally, for their help in mobilizing our research and health innovations.

- AMGEN
- Canadian Institutes of Health Research (CIHR)
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- Juravinski Research Institute
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- MediSystem
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- Ontario Osteoporosis Strategy
- PointClickCare
- RTOERO (Retired Teachers of Ontario)

**A special thank you for
all our funders, industry
partners, networks and
community partners**







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