2024 Annual Report

Western Institute for Neuroscience

Institute At A Glance

At the Western Institute for Neuroscience (WIN), we...

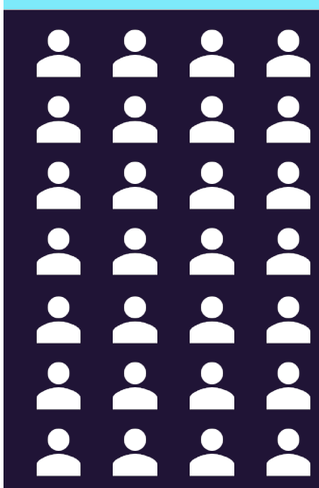
- bring together basic and applied researchers, clinicians, and community-based partners to enhance collaboration and innovation in neuroscience research
- deepen our understanding of neurological conditions, support the development of transformative treatments, and contribute to global advancements in brain health
- elevate and accelerate the impact of neuroscience research for a healthy society

OUR VISION | To unlock the mysteries of the brain for societal benefit.

About Us

Membership Overview

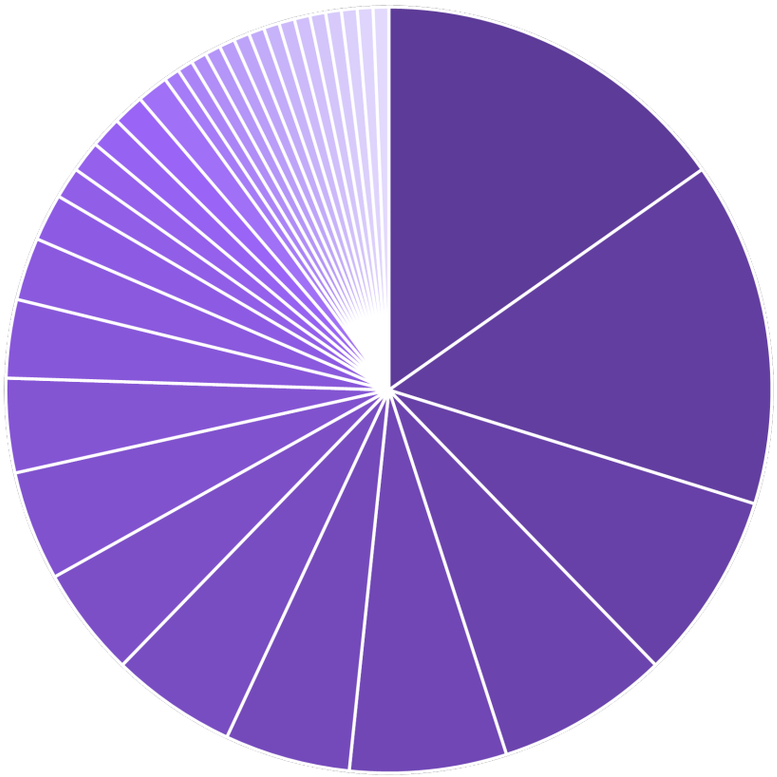
Trainees (233)



Faculty (151)

Staff (37)

Member Affiliations



- Psychology (23)
- Psychiatry (12)
- Communication Sciences & Disorders (10)
- Paediatrics (8)
- Electrical and Computer Engineering (7)
- Education (5)
- Physical Therapy (3)
- Medicine (2)
- Computer Science (2)
- Dentistry (1)
- Oncology (1)
- Health Studies (1)
- Mechanical and Materials Engineering (1)
- Mathematics (1)
- Languages and Culture (1)
- Kings University College (1)
- Continuing Studies (1)
- Clinical Neurological Sciences (22)
- Physiology Pharmacology (11)
- Medical Biophysics (8)
- Biology (7)
- Anatomy and Cell Biology (6)
- Kinesiology (4)
- Geography (2)
- Microbiology & Immunology (2)
- Philosophy
- Epidemiology and Biostatistics (1)
- Robarts Research Institute (1)
- Occupational Therapy (1)
- Biochemistry (1)
- Physics and Astronomy (1)
- Huron University College (1)
- Music (1)

NeuroConnect

NeuroConnect is WIN's flagship program. which promotes research approaches that integrate diverse voices and experiences. By catalyzing interdisciplinary research and engaging community at every stage of the research process, we will accelerate the path from research to meaningful impact in people's lives and society at large.

Theme 1 - Sustainable Brain Health

As people live longer lives, the rates of dementia and other neurodegenerative diseases are on the rise. This impacts not only those affected by the disease, but also their families and communities. ~~The~~ NeuroConnect award is ~~intended for a~~ team working to identify and implement strategies to promote healthy brain aging and to reduce dementia risk. This is crucial for optimizing cognitive function and for enhancing the quality of life of aging Canadians and their families.

Theme 2 - Mental Health: Mechanisms, Intersections, and Impacts

Mental health plays a vital role in people's quality of life. Neuroscience research can offer insights into the biological mechanisms involved and their intersection with a variety of variables such as genetics, physical health, as well as contextual and psychosocial factors. The successful team will explore possible interventions, protective factors, and areas for policy change to contribute to healthier community outcomes.

Sustainable Brain Health

CAREFIT

A Co-Designed Program to Promote Brain Health for Dementia Care Providers

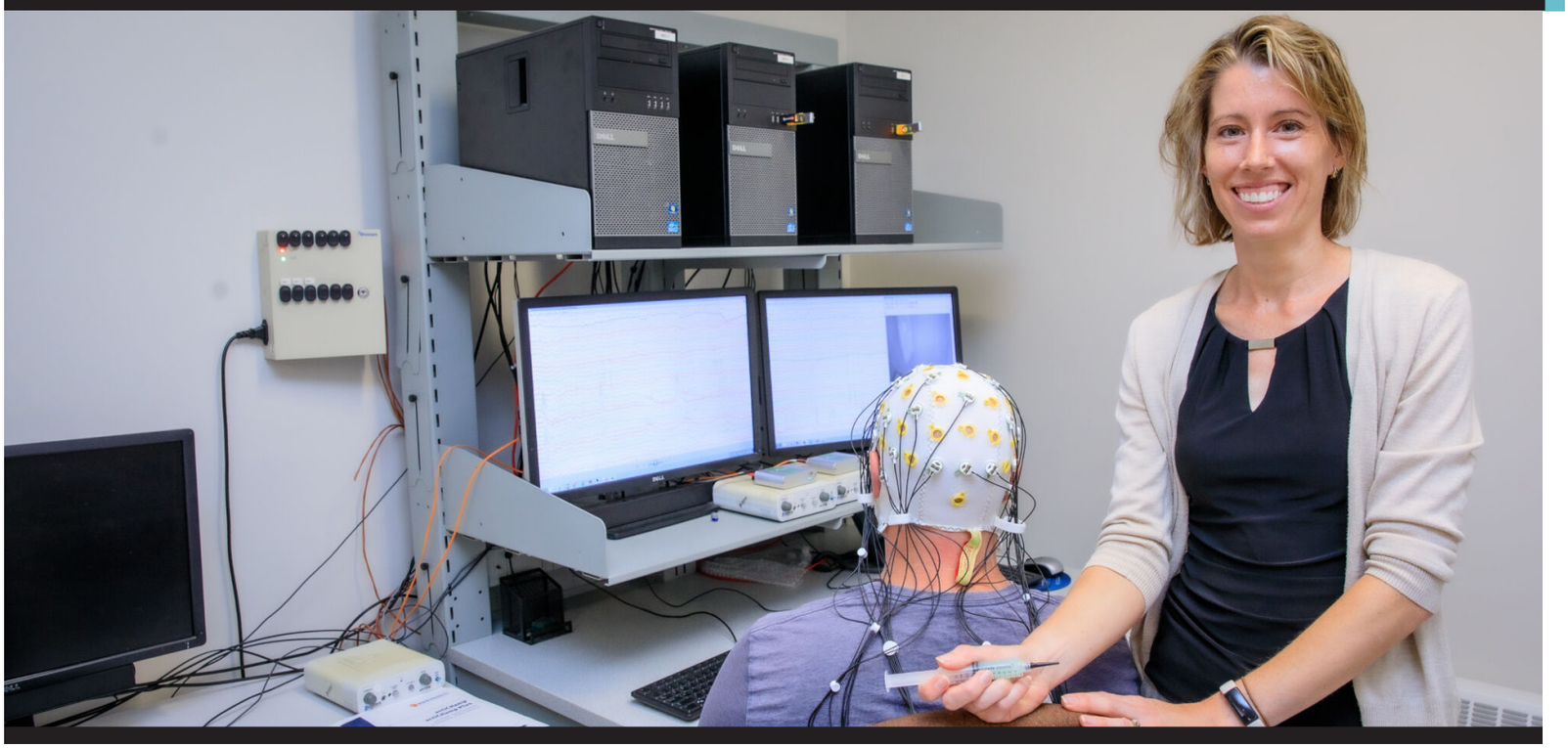
CareFit was the recipient of WIN's inaugural NeuroConnect award under the Sustainable Brain Health theme

The CareFit team includes experts from Western and the University of Waterloo. Academic researchers and community partners are co-designing a program that promotes brain health for dementia patients and their partners. Deliverables of this project include creating education, wellness, exercise, and social engagement opportunities informed by care partner needs.

Community partners include McCormick Care Group, The Gray Centre for Mobility and Activity, St. Joseph's Health Care London's Specialized Geriatric Services, The Canadian Centre for Activity and Aging, and the City of London.

"Research shows that family care partners face a higher risk of stroke, dementia, and cardiovascular issues. CareFit is committed to disrupting this concerning trend by promoting improved brain health and overall wellness for those selflessly caring for loved ones with dementia."
- Angela Roberts, CareFit Team Researcher

Sleep-Enhancing Intervention to Improve Cognitive Health and Aging



This research explores the potential of gentle, brain-synchronized sounds to enhance sleep and memory performance in older adults. The technique, known as phase-locked auditory stimulation, involves playing sounds during sleep. Backed by $1.1M in funding from the Weston Family Foundation, this interdisciplinary team will investigate its effectiveness in individuals at risk for Alzheimer's disease.

WIN supported the development of the successful application to the Weston Family Foundation, led by Laura Batterink (psychology professor) and Lyle Muller (mathematics professor). The institute provides ongoing in-kind project and financial management to ensure strong project execution and high translational potential.

The collaborative study brings together experts in psychology, neuroscience and computational science.

The research team also includes Adrian Owen, Stefan Kohler, Stephen Pasternak and Jaspreet Bhangu.

"If successful, this method could be a game-changer for brain health in aging populations. It's exciting to work on something that could have a direct, positive impact on people's lives," — Laura Batterink, Project Co-Lead

Open Science Framework

Open science is the concept of sharing data, information, tools and research results to eliminate barriers for collaboration and maximize research impact.

Framework Launch

With the launch of the open science framework, WIN became not only Western's first official open science institute, but the first in Ontario. In partnership with McGill University's Tanenbaum Open Science Institute and BrainsCAN, WIN developed a framework that outlines its commitment to implementing open science and provides institute members with practical guidelines and best practices.

"The framework can help someone who is well-versed in open science to level-up by making use of open tools, open data and open infrastructure, but it is also useful for people that have never used open science practices at all."
- Ali Khan, Co-Lead

Open Science Advisory Committee

The open science advisory committee was formed to ensure the institute remains at the forefront of responsible and impactful scientific sharing by supporting the development of best practices and identifying areas of strategic focus.

Open Science Trainee Awards

The awards recognize graduate students and postdoctoral scholars who champion open science through transparency, collaboration, and accessibility. Three awards — Newcomer, Peer Support, and Trailblazer — will be awarded in 2025 to celebrate different levels of engagement.

Journal Club

The ReproducibiliTea journal club meets monthly to explore the principles and practices of open science, where researchers at any stage are welcome to participate. The journal club aims to educate researchers and provide them tools to adopt open science methods, understand its benefits, and gain practical insights into personalized implemention.

kNOw PAIN

A world in which pain is no longer a barrier to achieving one's potential.

This project transforms pain research and practice through interdisciplinary and person-centered validation of the pain experience.

The team examines ways to improve our understanding of individuals' experience of pain and aims to develop a chronic pain patient registry unique to Southwestern Ontario. Collaborating with local health care institutions, pain clinics, and community health centres, kNOw PAIN will to gather comprehensive data encompassing diverse chronic pain conditions.

To learn more, visit our website: knowpain.ca

KNOW PAIN

20 members, including expertise in clinical, imaging and pain medicine

Preliminary Outcomes:

- Hosted two Meet the Team talks
- Planned the Inaugural kNOw-PAIN conference
- Funded a postdoctoral scholar
- Submitted a New Frontiers in Research Fund - Transformation (NFRF-T) application

The Ryman Prize

WIN member Vladimir Hachinski was the recipient of the 2024 Ryman Prize, an annual New Zealand-based grant for the world's best discovery, development, advance or achievement that enhances quality of life for older people.

~~He~~ is the first Western researcher and only the fourth from Canada to receive this prestigious award.

WIN in the News

WIN members were in the news over 230 times in 2024.

A YEAR IN REVIEW

- Supported three internal and two partnered NFRF-Transformation teams
- Provided grant development for Western's first Horizon Europe Pathfinder Grant application
- Contributed to successful Canadian Institutes of Health Research Dissemination and Training grants

Director's message - looking ahead

As I reflect on the Western Institute for Neuroscience's remarkable achievements in 2024, I am energized by the momentum we've built and the transformative opportunities that lie ahead. Our commitment to unlocking the mysteries of the brain for societal benefit has never been stronger, and our path forward is outlined by clear strategic priorities that will amplify our impact across Western and beyond.

Expanding our NeuroConnect Vision

Building on the successful launch of our flagship NeuroConnect Program, we are poised to unveil new thematic areas that will deepen our community-engaged research approach. These emerging themes will continue to bridge the gap between laboratory discoveries and real-world solutions, ensuring that our research begins and ends in the community. By expanding NeuroConnect, we will create even more opportunities for researchers, patients, policymakers, and community partners to co-create neuroscience research that addresses society's most pressing challenges.

Strengthening Collaborative Capacity

We are poised for significant growth in collaborative capacity in the coming year. We are committed to building robust partnerships that span academic disciplines, community organizations, industry leaders, and philanthropic foundations. These external partnerships represent more than funding opportunities—they are essential collaborations that bring diverse perspectives, resources, and expertise to our research endeavours. Through strategic alliances with community partners, we will ensure our research remains grounded in real-world needs, while partnerships with industry and foundations will accelerate the translation of our discoveries into tangible benefits for society.

Showcasing Interdisciplinary Excellence

Our membership spanning Western faculties and hospital research institutes, represents one of our greatest strengths. In the year ahead, we will spotlight the remarkable interdisciplinary collaborations emerging from this diversity. From engineers working alongside clinicians to develop innovative therapeutic technologies, to social scientists partnering with basic researchers to understand the societal implications of neurological conditions, we will document and celebrate these boundary-crossing partnerships that exemplify the future of neuroscience research.

Amplifying our Impact Through Strategic Communication

We are developing a comprehensive communication strategy designed to tell the compelling stories of neuroscience outcomes emerging from our community. This initiative will showcase how our research translates into improved treatments, enhanced quality of life, and transformative societal benefits. By sharing these stories through multiple channels and formats, we will increase public understanding of neuroscience, while demonstrating the vital importance of continued investment in brain research.

Introducing NeuroDevelop and NeuroEngage

Two exciting new programs will launch in the coming year to further our mission of excellence and engagement. NeuroDevelop will provide targeted programming to support interdisciplinary funding applications, offering researchers the tools, training, and collaborative networks needed to secure major grants that tackle complex neuroscience challenges. Meanwhile, NeuroEngage will create meaningful opportunities for our trainees to interact directly with external partners, fostering the next generation of neuroscientists who understand the importance of community-engaged research and knowledge translation.

Building on our Open Science Foundation

As Western's first institute to adopt open science as a foundational principle, we will continue to lead by example in promoting transparency, collaboration, and accessibility in research. Our partnership with the Tanenbaum Open Science Institute has established a strong foundation for expanding open science practices across our research community, accelerating discovery and maximizing research impact.

A Future of Transformative Impact

The year ahead promises to be one of significant growth and impact for the Western Institute for Neuroscience. With our strong leadership team, dedicated advisory committee, and committed membership, we are uniquely positioned to advance interdisciplinary neuroscience research that truly serves society. Together, we are not just conducting research; we are building a future where neuroscience discoveries translate directly into improved health outcomes, enhanced quality of life, and solutions to society's greatest challenges. The brain's mysteries may be complex, but our commitment to solving them collaboratively, transparently, and with deep community engagement has never been clearer.

Shawn Whitehead
Director, Western Institute for Neuroscience

Western Institute for Neuroscience

To learn more, visit our website:

win.uwo.ca

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