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Neuroscience pioneer Dr. Robert McDonald earns University of Lethbridge Speaker Research Award

A trailblazer in behavioural neuroscience, Dr. Robert McDonald is internationally recognized for his pioneering research into memory systems, neuroplasticity and Alzheimer's disease, and has been named the 2025 winner of the University of Lethbridge's Speaker Research Award.

"The Canadian Centre for Behavioural Neuroscience has gained its reputation as a world-leading neuroscience hub because of researchers such as Dr. McDonald," says Dr. Dena McMartin, ULethbridge vice-president (research). "His work does not build off others' previous work rather he changed the way the neuroscience world approached the study of learning and memory. An exceptional teacher, Dr.



McDonald's contribution to his field have led to significant advances in the study of Alzhemier's, aging and psychiatric disorders. His positive influence on public health and some of today's most pressing health issues make him a very deserving recipient of the Speaker Research Award."

The Speaker Research Award recognizes the importance of research, scholarship and performance to the philosophy and goals of the University.

McDonald will be presented with the Speaker Research Award at Spring 2025 Convocation, Ceremony I, on Thursday, May 29, 2023, at 9 a.m. in the Centre for Sport and Wellness gymnasium.

Dr. Robert McDonald

Professor Dr. Robert McDonald is a world-renowned neuroscientist whose research has fundamentally reshaped our understanding of learning and memory. Since joining the

University of Lethbridge in 2004, he has developed a program of research that advances scientific theory and contributes directly to clinical applications in neurodegenerative diseases, mental health and cognitive disorders.

McDonald's early work provided groundbreaking evidence that memory is not a unitary process but consists of multiple interacting systems. His seminal 1993 paper on triple dissociations in memory systems continues to be widely cited and has served as a cornerstone for subsequent research in behavioural neuroscience. By designing experiments that isolated specific memory processes and mapped them to neural circuits, McDonald helped establish a systems-based framework for understanding cognition. This approach, once considered outside the mainstream, has now become a central paradigm in the field.

Through more than three decades of continuous research funding — including prestigious grants from NSERC, CIHR and the Alzheimer Society of Canada — McDonald has led a highly productive lab investigating the biological foundations of memory, the effects of neurodevelopmental stressors, and novel models of Alzheimer's disease. His recent work includes translational research on the sporadic form of Alzheimer's, exploring how circadian disruption, the gut microbiome and early cannabinoid exposure affect cognitive health.

McDonald's program is defined by its significant scientific impact and integrative, collaborative nature. His lab has worked alongside experts in biochemistry, imaging, genetics and computational neuroscience to test innovative hypotheses. He has coauthored more than 150 publications — several in high-impact journals — and has been invited to present at international conferences and contribute to leading academic journals. His influence also extends to clinical and public health circles, where his work has shaped thinking on Alzheimer's, aging and psychiatric disorders.

Equity, diversity and inclusion are at the heart of McDonald's research and mentoring philosophy. Over his career, he has trained nearly 200 students, many from underrepresented groups, and has created an inclusive lab environment with flexible supports tailored to individual needs. Numerous trainees have gone on to successful careers in academia, medicine and industry, including at institutions such as McGill University, the University of Calgary and Washington University in St. Louis.

McDonald is also an exceptional teacher and campus citizen. He regularly teaches foundational courses in behavioural neuroscience and has served on departmental and national committees, including CIHR and NSERC grant panels. His contributions have brought significant distinction to the University of Lethbridge and have solidified its reputation as a leader in neuroscience research. His commitment to excellence, mentorship and advancing human knowledge makes him a most deserving recipient of the Speaker Research Medal. To view online: <u>https://www.ulethbridge.ca/unews/article/neuroscience-pioneer-dr-</u> robert-mcdonald-earns-university-lethbridge-speaker-research-award

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Our University's Blackfoot name is Iniskim, meaning Sacred Buffalo Stone. The University is located in traditional Blackfoot Confederacy territory. We honour the Blackfoot people and their traditional ways of knowing in caring for this land, as well as all Indigenous Peoples who have helped shape and continue to strengthen our University community.