

REPORT ON RESEARCH EXCELLENCE

2024-2025



INSIDE THIS REPORT

- Message from the Vice President **3**
- Award-Winning Research **4**
- By the Numbers..... **5**
- An Extraordinary Force for Change..... **6**
- Showcasing Research Excellence **9**
- Trent’s Research Centres **10**
- Looking Ahead..... **11**



Trent University respectfully acknowledges it is located on the treaty and traditional territory of the Mississauga Anishnaabeg. We offer gratitude to First Peoples for their care for, and teachings about, our earth and our relations. May we honour those teachings.

MESSAGE FROM THE VICE PRESIDENT



I am proud to present Trent University's 2024-2025 Report on Research Excellence – an annual celebration of the groundbreaking research, innovation, and discovery driven by our vibrant research community.

This report highlights the far-reaching impact of Trent's research, from local initiatives to global contributions, and affirms our continued commitment to advancing knowledge and addressing real-world challenges

through research.

At Trent University, research is a powerful tool for elevating our understanding of, and responses to, the most pressing challenges of our time. From uncovering how climate change is reshaping wildlife genetics and movement, to rethinking human evolution through endurance, to advancing water safety through ecological research, this report illustrates how our researchers are generating knowledge that deepens our understanding of the world. These stories reflect the breadth and depth of inquiry at Trent, where interdisciplinary collaboration and curiosity drive discoveries that matter.

The impact of research extends far beyond the university. It informs the policies that govern our communities, the technologies that power our lives, and the practices that protect our health and environment. Trent's research community is making a tangible difference – locally, nationally, and globally. These stories are a testament to why research matters: they demonstrate how knowledge can be transformed into action, providing the tools we need to meet today's challenges and prepare for those of tomorrow. As we navigate increasingly complex global issues, research stands not as an option, but as a vital engine for discovery, decision-making, and meaningful change.

I invite you to explore the pages of our 2024–2025 Annual Report as we celebrate research excellence, recognize award-winning achievements, and reflect on an extraordinary year of discovery and innovation at Trent University.

Dr. Holger Hintelmann

Vice President of Research & Innovation



AWARD-WINNING RESEARCH

DISTINGUISHED RESEARCH AWARD

Highest honour conferred on Trent faculty for research and scholarly activity



Dr. Marguerite A. Xenopoulos, the Canada Research Chair in Global Change of Freshwater Ecosystems and a professor in the Department of Biology at Trent University, is globally recognized for her groundbreaking research in freshwater ecology which has had a profound impact on the global scientific community, driving

innovation in habitat restoration and ecosystem management. Prof. Xenopoulos has secured millions of dollars in funding for research, which has supported research opportunities for undergraduate and graduate students at Trent, and worked alongside government agencies, community organizations, and other research institutions to advance evidence-based conservation practices for freshwater.

EARLY CAREER RESEARCHER AWARDS

Recognizes promising, early career researchers and is designed to help accelerate early-stage career faculty in building a sustainable and successful research program



Dr. Mary-Claire Buell is an assistant professor cross-appointed to the School of the Environment and Department of Forensic Science and director of the TRACE Lab (Transdisciplinary Action confronting Contaminants in the Environment). Dr. Buell's work emphasizes scientific innovation and engagement with Indigenous Knowledge, as evidenced by an outstanding record of research funding and publications.



An assistant professor in the Department of Philosophy, **Dr. Melanie Rosen** specializes in the philosophy of the mind and cognitive science, especially dreaming. Prof. Rosen has received multiple grants, including a SSHRC Insight Grant, and is a member of an international research project on the role of dreams in treating depression.



Dr. Stephanie Tobin, assistant professor in the Department of Biology, is a collaborative researcher, working with several Trent faculty members on aging and cell research projects. Dr. Tobin has an extensive publication record and has been awarded several national grants, including the NSERC Discovery Grant and NSERC Alliance Catalyst Grant.



Trent researchers are at the forefront of Trent's scholarly innovation, and the award recipients are shining examples of these achievements. Groundbreaking research takes time, so these awards, which recognize both those who have long-standing and productive research programs as well as those who are making strides in the early phases of their career, help to inspire investigators and ensure consistent and ongoing knowledge creation."

– Dr. Holger Hintelmann, Vice President of Research & Innovation

RESEARCH IMPACT AWARD

Celebrating Trent University researchers and research teams stewarding original and impactful research



An assistant professor in the Department of Biology, **Dr. Thomas Hossie** has run an externally funded research program studying a federally endangered salamander complex on Pelee Island, Ontario, for the last 10 years. Prof. Hossie's research has led to the discovery of new populations, characterization of genetic composition, and identification of areas for targeted restoration and habitat creation.

BY THE NUMBERS

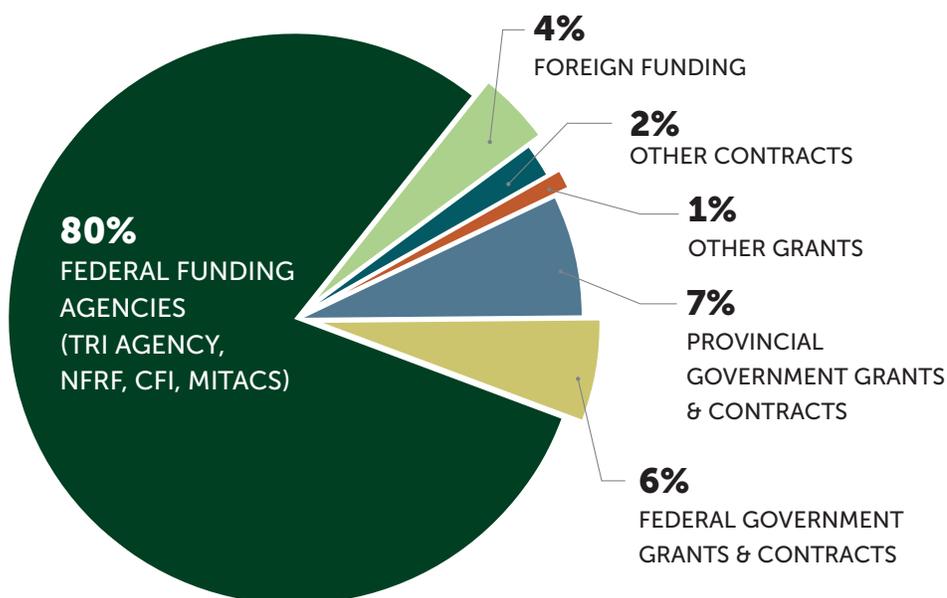


10+ Years ranked as a **top 50** research university in Canada

513 Undergraduate course offerings with **research opportunities**

1200+ **Graduate students** in 20+ Ph.D. and Master's programs

RESEARCH FUNDING SOURCES



AN EXTRAORDINARY FORCE FOR CHANGE

Research Unveils Insights into Deer Movement and Genetics Amid Climate Shifts

A study between Trent University and Parks Canada is tracking white-tailed deer in Ontario to further understand how their movement patterns and genetic traits have shifted and been affected in the face of climate change. Featured in the Climate Crew series by Parks Canada, **Dr. Aaron Shafer**, chair of Forensic Science and associate professor in the Environmental & Life Sciences Program, uses movement and genomic analyses to understand how animals are evolving in their natural environments as they shift due to climate change. This study is part of a larger research project, which also includes collaboration with scientists from the Ministry of Natural Resources and Forestry, who are also adjunct faculty at Trent.

The researchers are using radio collars, which are programmed to fall off the deer naturally in about two years, to collect data on deer home range information and movement patterns within the province. While they attach the radio collars, the researchers also collect DNA samples and genetic material and measure physical traits on each deer.

With valuable genetic and movement data, conservation, wildlife and nature agencies, like Parks Canada, can make more informed wildlife management and conservation decisions for white-tailed deer, along with other species, as climate change concerns continue to mount.



Award-Winning Graduate Student Research Examines Lake Erie's Ecology

Master of Science in Environmental and Life Sciences student **Carolina Koebel**, alongside Canada Research Chair in Global Change of Freshwater Ecosystems at Trent University, **Dr. Maggie Xenopoulos**, have been researching the effects of nitrogen on the growth of algae and the production of toxins in lakes. Awarded the Outstanding Student Presentation Award while presenting her findings on the connections between nitrogen, phosphorus and algae blooms at the American Geophysical Union Conference this past December, Carolina's research examines the role of nitrogen and phosphorus in the processes of algal growth and toxin production as a result of agricultural runoff, such as manure. With a focus on nitrogen's role, she aims to distinguish between these processes, providing insights that can help water treatment plants better predict and respond to cyanobacterial toxicity events, ultimately improving water management and protecting public health.

Creating an Ethical Space in the Knowledge Creation Processes

Trent University Durham GTA professors **Dr. Kimberly Calderwood** and **Dr. Marina Morgenshtern**'s book, *Re-Search Methods in Social Work: Linking Ways of Knowing to Knowledge Creation*, is a groundbreaking publication that brings together diverse worldviews within an ethical space where no single worldview dominates. Centered on principles of decolonization, anti-oppressive practice, social justice, collaboration and inclusion, their re-search methods text offers a transformative approach, serving as a vital guide for re-searchers from social work and other disciplines across Turtle Island/Kanata/Canada.

ARE HUMANS BORN TO RUN?

Rethinking the Role of Endurance in Human Evolution

Anthropology professor **Dr. Eugène Morin**'s five-year study disrupts longstanding theories about the role of hunting in human evolution, sparking global interest arguing that endurance running was essential to the survival of our ancestors.

Dr. Morin's research, co-authored with Bruce Winterhalder of the University of California Davis, surveyed over 8,000 documents on the unsettled debate around prehistoric hunting practices, producing compelling support for the Endurance Pursuit Hypothesis as a hunting strategy employed to pursue game through the practice of persistence hunting.

Professor Morin's discoveries deepen our understanding of the adaptive strategies that enabled humans to be able to run long distances, while also challenging prevailing beliefs about Indigenous hunting practices – specifically the notion that running down prey was rare.

Prof. Morin's findings captured global attention, earning coverage in prominent outlets, including *Smithsonian Magazine*, *The Washington Post*, *Outside Magazine*, *Canadian Running Magazine*, *The Independent*, *Phys.org*, *Science Blog*, *Archaeology Magazine*, and *New Scientist*.

“**Groundbreaking research doesn't just make headlines – it sparks dialogue, redefines boundaries, and shapes the path toward deeper understanding and lasting impact.**”

– Christopher Rooney, Senior Director, Research & Innovation



QUEEN ELIZABETH II DIAMOND JUBILEE SCHOLARSHIP ELEVATES COLLABORATIVE RESEARCH



Building on the strong foundation between Trent University and the International Institute for Environmental Studies (IIES), *United Global Plan of Action for One Health and One Climate*, a project led by Trent University with the IIES, was awarded a \$296,400 Queen Elizabeth II Diamond Jubilee Scholarship (QES) from The Rideau Hall Foundation and Universities Canada, supporting student and faculty led international research projects with a focus on the adaptation, response, and resilience to a changing climate.

The QES funding will support an initiative co-led by **Dr. Huy Dang**, associate professor in environmental chemistry at Trent University and Dr. Doug Evans, director of the IIES, facilitating research collaborations with IIES member institutions in Chile, South Africa, the United Kingdom, Vietnam, and beyond, offering opportunities for students and researchers to engage in hands-on fieldwork and international exchanges.

One Health and One Climate aims to address issues related to the health of humans, animals, plants, and the environment while improving resilience to the effects of a changing climate.

The main topics include sustainable development of critical minerals for the green transition, mitigation of greenhouse gas emissions, carbon capture using sustainable agriculture practices, and the impacts of climate change on water quality and resources.

“As a founding member of the *International Institute for Environmental Studies (IIES)*, Trent is committed to preparing the next generation of scholars by offering students and faculty unique opportunities to conduct research abroad and welcoming international researchers to Trent.”

– Dr. Holger Hintelmann, Vice President of Research & Innovation

SUPPORTING COLLABORATION AMONG INDIGENOUS & WESTERN KNOWLEDGE SYSTEMS

In a partnership co-lead by **Dr. Barbara Moktthewenke Wall**, associate professor and director of the Indigenous Studies Ph.D. program within Chanie Wenjack School of Indigenous Studies, and **Dr. Mary-Claire Buell**, assistant professor in the Trent School of the Environment and Department of Forensic Science, Trent University and Great Lakes Fishery Commission (GLFC) signed a Memorandum of Understanding (MOU) to support collaboration among Indigenous and Western knowledge systems.

Together, Trent and GLFC are looking to build research-related capacity and develop collaborative programs to support Indigenous Nations and Tribes across the Great Lakes in a way that is respectful of the Treaty and Inherent Rights and Interests of participating Nations and Tribes.

The MOU between Trent and GLFC confirms each institution's commitment to respectful, ethical collaboration of Indigenous and Western knowledge systems in a way that will be mutually beneficial for all involved. Establishing a graduate and Indigenous learner scholarship and support program – including developing elements such as fellowships, scholarships, and research support – will offer advanced training and experiences for Indigenous learners. Identifying Indigenous research priorities and opportunities to support Indigenous-led research on both sides of the Canada-U.S. border are key initiatives as part of this agreement.

SHOWCASING RESEARCH EXCELLENCE

Recognizing Trent's Exceptional Researchers

Trent's research community continues to excel, pushing boundaries and generating knowledge that addresses real-world challenges and shapes a better future for all. Their exceptional work has been recognized beyond our campus, earning prestigious awards and honors from leading organizations and institutions across the country and around the world.



Dr. Marguerite Xenopoulos became the first Canadian, the second woman, and only the tenth recipient of the American Geophysical Union's (AGU) William Kaula Award. Prof. Xenopoulos is one of Canada's foremost freshwater scientists – a knowledgeable voice among earth science experts at AGU. The Kaula Award recognizes Prof. Xenopoulos for her exceptional contributions to diversity, equity, inclusion, and accessibility (DEIA) at AGU Publications in her role as editor-in-chief of the *Journal of Geophysical Research: Biogeosciences*.



Dr. Andrew Tanentzap, Canada Research Chair in Climate Change and Northern Ecosystems at Trent University's School of the Environment, was awarded a prestigious Killam National Research Council (NRC) Paul Corkum Fellowship. The award will support Professor Tanentzap's research advancing accessible water quality monitoring and community-based environmental stewardship. By leveraging AI-powered data processing and remote sensing, his work, alongside experts across Canada, aims to make advanced water monitoring more accessible and cost-effective for every community.



Known for her work on social inequality, poverty, youth justice, mental health, and homelessness, **Dr. Naomi Nichols** earned new recognition for blending activism and scholarship to drive systemic change. Professor Nichols, Canada Research Chair in Community-Partnered Social Justice, was honoured with the 2024 Lee Founders Award from the Society for the Study of Social Problems (SSSP), a lifetime achievement award presented to recipients who have demonstrated a commitment to social action programs that promote social justice.



Ph.D. student **Luka Stojanovic** was recognized with the distinguished Pierre Elliott Trudeau Scholarship, a highly competitive national graduate research honour aimed at addressing Canadian social issues. Luka, whose doctoral research, *From Silence to Empowerment: Restorying Experiences of Chronic Pain Among Older Adults in Ontario*, explores the widespread but often stigmatized experience of chronic pain among older adults, is only the second Trent student to receive this award.



Ph.D. candidate in Trent's Environmental & Life Sciences graduate program, under the supervision of Dr. Robert Huber and Dr. Sanela Martić, **Josephine Esposto** earned national recognition for her research, receiving a Rising Stars Trainee Award in ALS Research from Brain Canada. Josephine is engaged in work that could improve detection and treatment for ALS, commonly known as Lou Gehrig's disease, in which patients can lose muscle control to move, speak, eat, and breathe.



Trent hosted **Dr. Holly M. Karibo** as the 2024-25 Fulbright Canada Research Chair in Comparative Canada U.S. Studies. Prof. Karibo's research project, "Ladies, Liquor, and the National Line: Gendering Prohibition in the Great Lakes Borderlands," was the first in-depth study of women's roles in cross-border illegal economies during the American Prohibition Era. Joining Trent from Oklahoma State University, Prof. Karibo's appointment continued to strengthen Trent University's commitment to cross-border academic exchange and research collaboration.

INNOVATION IN ACTION: TRENT'S RESEARCH CENTRES

Trent University's Research Centres play a critical role in advancing our pursuit of research excellence. With national and international recognition, a rich diversity of research across disciplines, a strong emphasis on interdisciplinary collaboration, and meaningful student involvement, these centres are at the heart of Trent's research culture. Trent's newest research centres deepen this commitment by expanding our capacity to address complex global challenges, foster innovation, and create new opportunities for impactful scholarship.

Trent Farm Research Centre

With its designation as an official Research Centre, the Trent Research Farm gains new momentum through increased funding and support for its expanding research initiatives. Situated on a 35-hectare parcel of land on the East Bank of campus, the Trent Farm Research Centre will serve as an active learning hub for faculty and students across diverse disciplines – enhancing hands-on research opportunities and addressing the unique challenges of regional small-scale farming.

Molecules, Cells & Systems Research Centre

The formation of the Molecules, Cells & Systems Research Centre was driven by the success of the MCS Research Group, which has fostered innovative, cross-disciplinary collaboration since its inception in 2019. As a shining example of Trent's interdisciplinary approach, the Centre brings together researchers from Biology, Chemistry, Forensic Science, Kinesiology, and Psychology to apply a molecules-to-systems approach to their research.

Create Centre for Entrepreneurship

Trent's newest Research Centre, the Create Centre for Entrepreneurship, empowers aspiring entrepreneurs by providing resources, mentorship, and inspiration to navigate the entrepreneurial journey. Sharing a dynamic space with Trent's Leadership and Democracy Lab, this new centre represents a bold step forward in the university's commitment to cultivating innovation, leadership, and real-world problem solving.



LOOKING AHEAD

As we look ahead with a deepening commitment to discovery, innovation and impact, the momentum built over the past year is propelling Trent University into its next phase of research intensification. Fueled by a surge in successful funding applications and engaged partnerships, this momentum is laying the foundation for transformative projects that address complex global challenges while enriching the academic experience for students and faculty alike.

Supporting this growth is the expansion of physical sites and spaces dedicated to research. New centres and facilities are being developed to foster creativity, experimentation, and engagement. These environments are designed not only to support cutting-edge inquiry but also to serve as collaborative hubs where ideas can flourish across disciplines – shaping a more dynamic and responsive research ecosystem.

A key milestone on the horizon is the appointment of a new Tier 2 Canada Research Chair in Social Equity and Health Policy Research. Hosted by the Trent/Fleming School of Nursing, this appointment reinforces Trent's commitment to advancing research that supports healthy and sustainable communities and environments and reflects the university's broader dedication to attracting and retaining leading scholars whose work is shaping policy, informing practice, and driving meaningful change in Canada and beyond.

Much of Trent's success stems from our research excellence and the willingness of the Peterborough and Durham campuses to build diverse partnerships and explore new avenues of inquiry. Despite the upheaval in the world around us, our researchers remain committed to shaping future leaders and fostering critical thinking for momentous change.



Trent University
Office of Research & Innovation

Enwayaang (GCS) 344
Symons Campus
705.748.1011 ext. 7050
research@trentu.ca

trentu.ca/researchinnovation

