

Research At Trent

Office of Research & Innovation

www.trentu.ca/researchinnovation

The Office of Research and Innovation supports the University community in its mission to “advance learning through the creative interaction of teaching and research of the highest quality.” Responsible for achievement of Trent’s research goals and objectives, the Office of Research and Innovation is responsible for the coordination and promotion of research and scholarship within the University.

In particular, the Office of Research and Innovation works with local, regional, national, and international members of the research community to promote and steward excellence and diversity in research with an emphasis on interdisciplinary research; open, accountable research practices; the involvement of students in research; and the training of highly qualified personnel. Also, the office is responsible for the provision of resources to researchers.

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Research Centres

www.trentu.ca/researchinnovation/trent-research-matters/centres-and-institutes

Trent University has a number of interdisciplinary research centres which represent clusters of faculty and students with shared research interests. These centres foster academic discussions, support visiting speakers' series and workshops, and conduct collaborative research. In some cases they are heavily involved in graduate student training, from the selection of graduate students into programs to the delivery of courses and the evaluation of theses. Some centres are not affiliated directly with particular graduate programs, although graduate students are involved in the research that they conduct. Overall, the centres provide an exciting academic environment for students and faculty at Trent.

Canadian Environmental Modelling Centre

trentu.ca/cemc

Contact: **D. Ellis**, Chemistry

The mission of the Canadian Environmental Modelling Centre (CEMC) is to contribute to the improved management of chemicals in our environment by acquiring and analyzing appropriate data and developing, validating, and disseminating mass balance models that describe the fate of chemicals in the environment. The objective of the CEMC is to understand and predict quantitatively the pathways of contaminant transport and the resulting exposure. When we can establish a quantitative link between sources, exposure, and risk of effects, we are in a strong position to control sources to acceptably low levels, avoiding the problems of unacceptable contamination from excessive sources on the one hand, and uneconomic, unnecessary regulations on the other. Emphasis at the CEMC is placed on training undergraduate and graduate students in environmental science, on co-operation with the other faculty at Trent, and on providing research services relevant to current Canadian and international needs. The CEMC is a part of the larger, multi-university Canadian Environmental Modelling Network (CEMN) and collaborates actively with other researchers both nationally and internationally.

Centre for Health Studies

trentu.ca/ihs

Contact: **E. Scharfe**, Psychology

The objectives of the Centre for Health Studies are to provide a focus for the different types of research conducted at Trent on various aspects of health, to foster greater communication among health researchers within and outside the University, and to facilitate the training of students (both graduate and undergraduate) for careers and research in health-related fields.

Centre for the Study of Theory, Culture & Politics

trentu.ca/theorycentre

Contact: **D. Holdsworth**, Trent School for the Environment

The Centre for the Study of Theory, Culture & Politics encourages research and teaching guided by critical/theoretical orientations that have emerged from contemporary developments in the humanities and social sciences. These orientations test the limits of conventional disciplines and contribute to the study of the complex network of relations that link knowledge, culture,

and politics. The centre is concerned with fostering substantive projects of research as well as fundamental reflection on conceptual and methodological issues. The centre aims to integrate teaching and research, and to encourage the work of both emerging and established scholars. It promotes scholarly research and interchange through conferences, symposia, speaker series, and specific research projects and publications. The MA Program in Theory, Culture and Politics, as well as the PhD Program in Cultural Studies, are also affiliated with the Centre.

Frost Centre for Canadian Studies & Indigenous Studies

trentu.ca/frostcentre

Contact: To be named

Established in 1982, the Frost Centre is named in honour of Leslie Frost, the first chancellor of Trent University. The Frost Centre is one part of the School for the Study of Canada, which encompasses the Department of Canadian Studies and two graduate programs: the MA in Canadian Studies & Indigenous Studies, and the PhD in Canadian Studies (jointly administered with the School of Canadian Studies at Carleton University). The Frost Centre sponsors research and public lectures and integrates the humanities, social science, and other interdisciplinary departments and programs that focus on Canadian and Indigenous issues.

Institute for Watershed Science

trentu.ca/iws

Contact: **C. Metcalfe**, Environment

The Institute for Watershed Science is a research organization that focuses on understanding physical and ecological processes governing watershed function and the transfer of this knowledge to support water management decisions. The institute fosters multi-disciplinary collaboration involving faculty at Trent University with expertise in watershed science in partnership with other academic institutions, government and non-government organizations, and the private sector. The institute is committed to the transfer of knowledge on watershed science to practitioners through publications, courses, workshops, and conferences. The institute also coordinates the CREATE H2O program that supports the training of graduate and undergraduate students to address problems related to water quality in First Nations communities in Ontario and Manitoba.

Institute of Integrative Conservation Biology

dennismurray.ca

Contact: **D. Murray**, Biology

In the coming decades, society must improve its ability to understand, predict, and develop responses to environmental change, if we are to avoid or mitigate the expected profound human influences on natural and managed landscapes and ecosystems. Conservation biology, which traditionally involves the integration of genetics, physiology, mathematics, ecology, and computer modelling, is a core discipline that addresses a broad range of questions and challenges associated with contemporary and future environmental change. In the twenty-first century, however, conservation biology must also include increased emphasis on the human dimensions of environmental change through further integration of disciplines like sociology, anthropology, economics, and psychology, lest we risk developing strategies and policies that have neither public support nor high probability of success. Established in 2015, the IICB capitalizes on existing research strengths and synergies in the area of conservation biology to stimulate and enhance robust and

relevant environmental change research at Trent University. Specifically, the mission of the IICB is to promote and facilitate interdisciplinary research, collaboration, and graduate teaching and training in conservation biology and related fields, to influence research and policy decisions at the regional, national and international scales.

James McLean Oliver Ecological Centre

trentu.ca/olivercentre

Contact: **E. Sager**, Manager

The James McLean Oliver Ecological Centre is located on Pigeon Lake, 45 minutes north of Trent's main campus. The 270-acre waterfront property serves as an ecological field station and a centre for long-term ecological and environmental research in collaboration with other universities, government agencies, and local groups. Major areas of focus are climate change, long-term monitoring of biological communities, the responses of ecosystems to pollutant stress, and nutrient dynamics and ecosystem changes in the Kawartha Lakes. The property contains a number of terrestrial and aquatic habitats with a rich diversity of flora and fauna.

Natural Resources DNA Profiling & Forensic Centre

web.nrdpfc.ca

Contacts:

B. White, Biology

B. Seyler, Manager

The centre (NRDPFC) houses state-of-the-art automated DNA analytical infrastructure and is located in Block A of the DNA Building. The DNA Building was opened in 2006 following \$7.2 million of funding from the Canada Foundation for Innovation (CFI) and the Ontario Innovation Trust (OIT), together with support from partners including the Ontario Ministry of Natural Resources (OMNR). The centre provides a range of DNA services, from automated DNA extractions to DNA profiling and sequencing, to Trent faculty and students and researchers at other universities, government scientists, and the private sector. The infrastructure includes the Wildlife DNA Forensic Laboratory that provides forensic services for a number of provincial, national, and international agencies including the OMNR, Parks Canada, the Department of Fisheries and Oceans, Environment Canada, the US Fish and Wildlife Service, and the US National Marine Fisheries Service. It also houses an ancient DNA laboratory for the analysis of historical DNA samples and a Biohazard level III containment facility for research on wildlife diseases like rabies and Lyme disease. The genomics and automation facilities contain a Roche 454 GS Junior next generation sequencer, 2 ABI 3730 sequencers, 4 automated liquid handlers, automated storage freezers, and thermal cyclers, including ABI real-time instruments. Ongoing NRDPFC genomic projects include those focused on conservation of threatened and endangered species such as the North Atlantic right whale, woodland caribou, wolverine, and badger, together with the genomic analysis of dairy goats and applications of genomics to food traceability genotoxin analysis.

Trent Biomaterials Research Program & Laboratory

trentu.ca/tcbr

Contact: **S. Narine**, Physics & Astronomy, Chemistry

Work within the TCBR is centred on creating sustainable materials from agricultural feedstock. The focus is not only on the development of the specific materials, but also on the development of models for agricultural utilization, and on assessments of geographical, environmental, and commercial impacts. This is a research program where science meets social science and humanities, and where the creation and use of biomaterials is being examined within an ethical framework. One of only a handful of programs of its kind in the world, the TCBR is a leader in this life-changing approach to research. The TCBR's unique interdisciplinary nature examines the full spectrum of the biomaterials endeavour, from the crop to the development of bio-based products and the implications of their use. State-of-the-art laboratories consisting of 15,000 square feet of space are spread over four distinct laboratory groups. Each group examines a particular consideration of biomaterials. This design, combined with Trent's remarkable facilities and equipment, positions the TCBR as a world leader in the development and study of biomaterials.

Trent Centre for Aging & Society

trentu.ca/aging

Contact: **M. Skinner**, Environment

The Trent Centre for Aging & Society promotes excellence in interdisciplinary research on aging and old age that is critically-informed, challenges ageist policies and practices, and is responsive to the issues facing older people and aging communities across Canada and internationally. Its mandate is to cultivate new areas of scholarship in aging studies, to enhance the study of aging and old age within Trent's graduate and undergraduate programs, and to foster community engagement via research collaborations, public seminars, and continuing education courses in the Peterborough region. It supports faculty research in the social sciences, humanities, and health studies, coordinates the Collaborative Specialization in Aging Studies graduate program, and sponsors undergraduate community-based education projects, graduate scholarships, postdoctoral fellowships, a visiting speaker series, international conferences, and public events such as the annual Peterborough Seniors Summit. The centre brings together Trent faculty, visiting scholars, students, and community members interested in aging from a critical perspective.

Trent Centre for Materials Research

trentu.ca/tcmr

Contact: **A. J. Vreugdenhil**, Chemistry

The Trent Centre for Materials Research fosters research at Trent leading to an improved understanding of the properties of materials of potential benefit to industry, and the training of highly qualified personnel in these areas. To do this, the centre brings together Trent faculty with research interests in applied materials research, currently in the departments of Chemistry and Physics & Astronomy. Its goals are to improve communications and cross-fertilization of research among the faculty and their graduate students, develop research collaborations, and expose all of the participants to a broad spectrum of research, both experimental and theoretical, in the materials area. The centre holds research seminars as part of, and in addition to, the weekly Physics/Chemistry seminar series.

Trent Centre for the Critical Study of Global Power & Politics

Contact: **A. Pickel**, Political Studies

trentu.ca/globalpolitics

The Centre for the Critical Study of Global Power & Politics provides a focal point for faculty, students, and external members; hosts speakers and events; holds workshops; and runs topical working groups. The centre publishes scholarly papers, discussion papers, and political position papers on various dimensions of global power and politics. It considers itself critical above all in the sense of “questioning the pretensions of organized power” (Harold Innis). At the centre we use an interdisciplinary political economy approach to explore the relationship between states and markets, or power and wealth, as well as how these relationships interact with environmental issues, spatial and historical contexts, social hierarchies, and cultures and identities. In this age of “globalization,” we are particularly interested in research that calls into question the traditional separation between the political economy of domestic/national contexts and that of the international/global realm. The centre strongly encourages student participation in its activities.

Trent University Archaeological Research Centre

trentu.ca/tuarc

Contact: **E. Morin**, Anthropology

The Trent University Archaeological Research Centre (TUARC) is dedicated to the investigation and understanding of the human past through the study of material culture, skeletal remains, and ecological and environmental data. TUARC works to educate students and interested community members in past human societies, and it facilitates collaboration among professional archaeologists, researchers, graduate students, and volunteers in the Peterborough region. Research facilities include specialized laboratories for archaeoinformatics (including Geographical Information Systems, remote sensing, and quantitative and spatial analysis), human osteology, isotope geochemistry, palaeo-DNA studies, use wear analysis, and zooarchaeology, as well as the archaeologies of the Mediterranean, Mesoamerica, Ontario, and South and Southeast Asia. TUARC sponsors workshops and special courses on archaeology, assists with the publication of the findings of associated scholars, organizes public lectures on recent archaeological discoveries and advances, and maintains a resource room and library. TUARC also works closely with Trent’s graduate program in Anthropology, providing collaborative research grants and a forum for graduate students and professional archaeologists to meet and discuss current research in the discipline.

Water Quality Centre

trentu.ca/wqc

Contact: **N. Emery**, Interim Director, Office of Research and Innovation

The mission of the Trent University Water Quality Centre is to advance new approaches to environmental analyses and to train graduate and undergraduate students on mass spectrometry techniques. The Centre can analyze almost any type of sample, including those from: water, soil, sediment, tissue, and air. We develop and refine techniques to the point where they can be disseminated to, and used by, researchers, including students, and faculty, or those from industry, government agencies, and analytical service providers. The Centre is available to provide specialized analytical services to internal (Trent) and external clients who need to deal with emerging environmental issues in a timely and cost-effective fashion. To accomplish this, the Centre welcomes opportunities to form strategic partnerships with individuals and groups from industry, government, and NGO sectors.