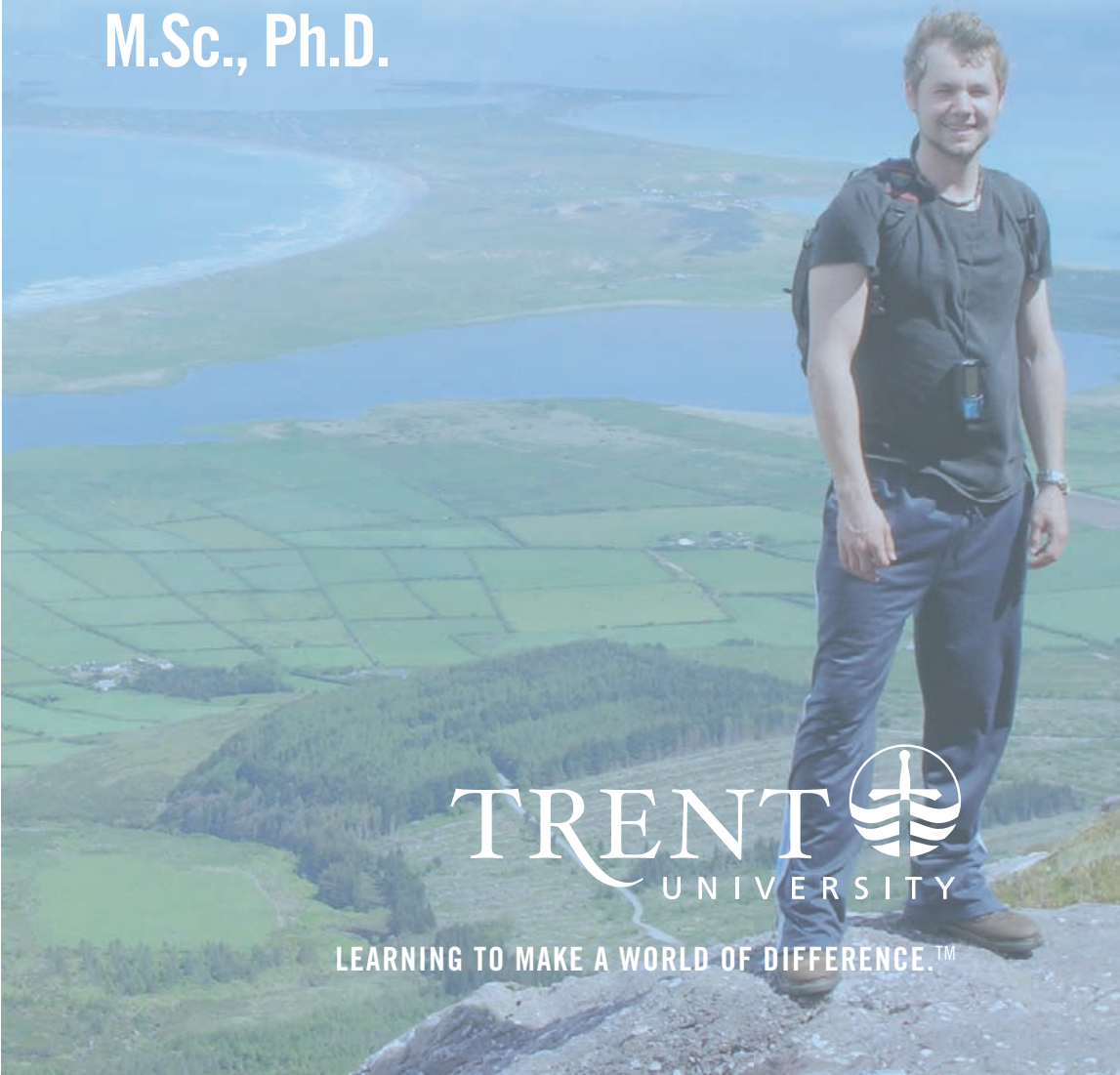


GRADUATE STUDIES AT TRENT UNIVERSITY



# Environmental & Life Sciences

## M.Sc., Ph.D.



TRENT UNIVERSITY



LEARNING TO MAKE A WORLD OF DIFFERENCE.™

The Environmental & Life Sciences Graduate Program (formerly known as Watershed Ecosystems) represents Trent University's groundbreaking approach to environmental scholarly research. Offering both M.Sc. and Ph.D. options, this program gives students the opportunity to work with leading experts and undertake research in a number of world-class facilities located throughout the region. The experience and interdisciplinary skills that graduates of the Environmental & Life Sciences Graduate Program acquire at Trent opens a world of professional possibilities both at home and abroad in this diverse and rapidly growing field.



## A Diversity of Talent and Experience

The faculty within the Environmental & Life Sciences Graduate Program is committed to the innovative research and rigorous standards that distinguish Trent's reputation and continue to attract the support of significant funding agencies. Drawing on a range of departments at the University, including Biology, Geography, Chemistry, and Environmental and Resource Science/Studies, the faculty's collective interests reflect a diversity of research activities and accentuate the interdisciplinary nature of the program. In addition, the program welcomes adjunct professors from other universities, NGOs, and government organizations, such as the Ministry of Natural Resources, which has its headquarters in Peterborough.

With access to such experience as well as the University's impressive research facilities, students enjoy the opportunity to engage in original research that spans a range of interests.

## World-Class Research Facilities

By being based in Peterborough, Environmental & Life Sciences Graduate Program students enjoy an unparalleled advantage over other institutions, especially with respect to field work. As well, students have access to numerous first-rate facilities. Among these is North America's leading analytical water quality centre (Worsfold), which, along with other resource centres, gives Trent students unprecedented access to expertise in the field and career connections in this discipline throughout the world.

### These facilities include:

- Worsfold Water Quality Centre
- Institute for Watershed Sciences
- Canadian Environmental Modelling Centre
- James McLean Oliver Ecological Centre
- Natural Resources DNA Profiling and Forensic Centre

Test the limits of conventional disciplines, and participate in a culture of intellectual questioning and exchange – explore your graduate studies options at Trent.

Innovative.



LEARNING TO MAKE A WORLD OF DIFFERENCE

## Finding Your Fit in the Field

Faculty in the Environmental & Life Sciences Graduate Program have a variety of research interests including:

- Physical Geography
- Climatology
- Hydrology
- Ecotoxicology
- Elemental Cycling
- Organic and Inorganic Contaminants
- Environmental Chemistry
- Environmental Analysis and Management
- Molecular Biology of Pathogens
- Cell Biology & Genetics
- Limnology
- Wildlife Management and Conservation Ecology
- Plant Sciences
- Molecular and Physiological Ecology



## Financing Your Future at Trent

Trent University recognizes how vital it is for students to have proper funding to help them pursue their graduate work. M.Sc. students receive a minimum of \$17,000 for two years and Ph.D. candidates receive a minimum of \$19,000\* for at least three years. Students in the fourth year of their Ph.D. are eligible to receive a Graduate Teaching Assistantship (GTA) if required. Funding is generated through a number of sources, such as internal and external scholarships, GTAs and faculty research funds. Graduate students are also strongly encouraged to apply for external scholarships (NSERC, OGS) during their last year of undergraduate or M.Sc. programs to help maximize available funds.

## Entering the Masters Program

Applicants to the M.Sc. program will have earned an Honours B.Sc. in either Biology, Environmental Chemistry, Geography, Environmental Science or the equivalent thereof. Prospective students are expected to hold a B+ (77%) or equivalent standing in their third and fourth years of their undergraduate B.Sc. to be considered for admission. Applicants should also include a statement of research interests and, if possible, a prospective faculty supervisor(s). Applications are due by February 1. Applications will be considered after this date depending on available spaces.

A photograph of a male scientist with short blonde hair, wearing safety goggles and a white lab coat. He is looking intently at a piece of glassware he is holding with a purple nitrile glove. The background is a laboratory setting with various glass flasks and test tubes. The word "Progressive." is overlaid in large white font on the right side of the image.

# Progressive.

## Step Up to a Ph.D.

For those students of advanced standing within the M.Sc. program, there is the opportunity to convert to the Ph.D. program between 9-15 months after commencing the initial degree. To qualify for the Conversion Examination, eligible students must have obtained at least an A-minus (80%) standing in at least two half-courses, and also must petition the Environmental & Life Sciences Graduate Program director.

To be eligible for the Ph.D. program, students should hold an M.Sc. degree (or equivalent) in the natural or physical sciences, and have maintained at least a B+ (77%) standing in the fourth year of undergraduate studies. Prospective candidates for this program are expected to have a clear plan of study and, prior to acceptance, identify a faculty member who is willing to act as a supervisor and provide the necessary financial support for the duration of the program.

Ph.D. students are expected to maintain at least a Second-Class Standing (B- or 70%) in all courses to remain registered in this program. In addition to coursework, Ph.D. candidates will submit a thesis based on original research, and are also required to present a seminar for the Environmental & Life Sciences Graduate Program seminar series. Full-time students are expected to submit and defend their thesis within four

## A World of Research Opportunities

What continues to distinguish the Environmental & Life Sciences program at Trent is the University's commitment to research excellence. With a world-renowned faculty backed by outstanding facilities students are given the opportunity to engage in groundbreaking research in locations around the globe. Example highlights of student research projects include:

- Working in the region of Alberta's oil patch, Colin Whitfield collects soils, waters and gasses to determine the capacity of ecosystems to absorb certain pollutants and determine their harmful effects over time. His work will help develop an environmental framework for the region.
- Dario Acha studies the effects of mercury contamination on the health of communities in the Amazon basin. This mercury contamination is largely linked to fish consumption.
- Involved with an NSERC and Northern Scientific Training Program-funded project, Ph.D. student Denina Simmons models and characterizes the process of Selenium uptake in the freshwater algae species *Chlorella vulgaris* under various nutrient conditions to predict ecotoxicological impacts in selenium affected environments.
- Using DNA analysis, Brenna McLeod conducts research on the effects of 16th century Basque whaling in Labrador. She has received an award to collect whale bones in the Arctic for further study and also received an NSERC scholarship for a Taiwan exchange program.
- In a research project sponsored by the Ministry of Natural Resources, doctoral candidate Michael White assesses the ecological effects of water level fluctuations across Ontario, particularly on the biodiversity and ecosystem function of freshwater invertebrates.
- Throughout her research into Right Whales, Roxanne Bower works with the New England Aquarium in Boston and, thanks to her NSERC Industrial grant, she also works first-hand with whale watching companies in the Bay of Fundy.
- In the coastal lagoons and inland lakes of southern Argentina, Carmen Lishman studies why the population of the Magellanic Plover is so small, and what the threats are to its survival.

## One of Canada's Most Research Intensive Universities

Trent University is consistently recognized as a leader in the creation of high calibre research and scholarship. Total research funding to Trent has more than doubled over a five year period and the success of Trent faculty in attracting research funding from diverse sources continues to be remarkable. Trent's ten Canada Research Chairs cover a broad spectrum of disciplines, reflecting the institution's careful balance between research in the humanities, sciences, and social sciences. As federal and provincial governments continue to make knowledge transfer and outreach a priority for post-secondary institutions, Trent will continue to draw on its key strengths to further its research accomplishments and reputation nationally and internationally.

## In Our Students' Words

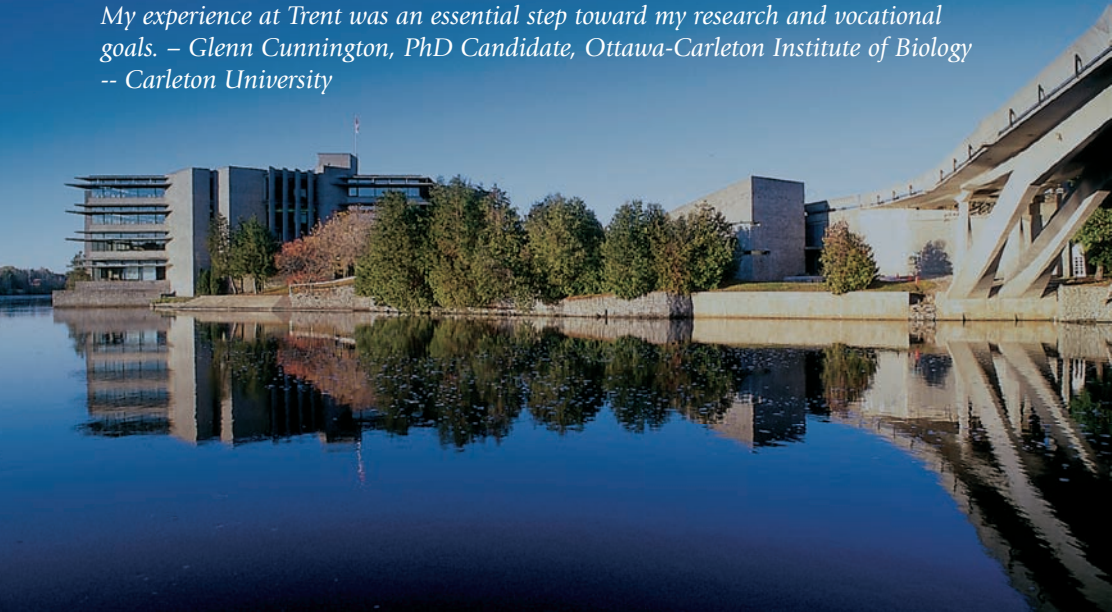
What connects graduates of the Environmental & Life Sciences Graduate Program is much more than the Trent experience itself. It is the opportunity to work with some of the leading researchers in their discipline and, as evidenced by these comments, to pursue challenging careers around the world:

*I returned to do graduate work in veterinary entomology after having been in business for ten years. The courses were outstanding, and the support from my supervisor was professional and generous. The Environmental & Life Sciences Graduate Program offers an opportunity to do outstanding research with first class scientists. – Dr. David Beresford, Assistant Professor in Biology - Trent University*

*There are two features of the Environmental & Life Sciences Graduate Program that enabled me to enter my full-time job immediately upon completing my PhD at Trent. First, Trent has the best catchment science and catchment biogeochemistry program in Canada. Second, the Trent faculty has overseas contacts and engages in more international projects than is typical of Canadian universities. – Dr. Martyn Futter, Catchment and Coastal Modeller – The Macaulay Institute (Aberdeen)*

*As a student in Trent's Environmental & Life Sciences Graduate Program, I was able to work with state-of-the-art equipment in a small and supportive academic community. Today in my research career, I regularly use the technical and critical thinking skills I developed at Trent. – Philip Beaudette, Research Associate - Iogen Corporation*

*The Environmental & Life Sciences Graduate Program provided a quality educational experience that allowed me to further my theoretical and applied knowledge of the field of biology. The Faculty was consistently available to provide assistance and direction throughout the course of my graduate degree. My experience at Trent was an essential step toward my research and vocational goals. – Glenn Cunnington, PhD Candidate, Ottawa-Carleton Institute of Biology -- Carleton University*





## Life at Trent University

Trent University has earned a reputation for exceptional teaching and innovative research activity. The University as a whole nurtures a collaborative atmosphere in which students from across the country and around the world are encouraged to engage in interdisciplinary learning while enjoying a variety of social and cultural activities. For graduate students in particular, Trent affords a rich research and learning environment that facilitates an interdisciplinary perspective on just about any topic of interest - resulting in a broader range of options upon completion of your Trent degree. Graduate students at Trent also have access to a college dedicated primarily to graduate studies. Located in downtown Peterborough, Catharine Parr Traill College is a hub of activity for all graduate students.

## The Peterborough Lifestyle

Trent University is located in Peterborough along the banks of the Otonabee River just 90 minutes from downtown Toronto. A friendly, mid-sized Ontario city, Peterborough boasts a vibrant arts and music scene, a varied selection of restaurants, and pubs, and a full complement of services combined with affordable accommodation and easy access to surrounding lakes and wilderness of the world famous Kawartha Lakes region. It's no wonder so many people are recognizing the benefits of living and studying in Peterborough.

## Admission Requirements

As the Environmental & Life Sciences Graduate Program involves a number of different program scenarios and application opportunities, it's recommended that prospective students go to the department's web site at [www.trentu.ca/graduatestudies](http://www.trentu.ca/graduatestudies) for information regarding specific graduate program requirements.

Please note that for non-English speaking students evidence of proficiency in English is required. As well, some applicants may be required to take undergraduate courses as a condition of admission to help round out the required background to pursue this program. Applications for the program are due February 1, but the program will consider applications after this date as space is available.

To discover more about the Environmental & Life Sciences Graduate Program and learn why an education at Trent University offers tomorrow's researchers and scientists the tools they can use for life, please visit our program web site at [www.trentu.ca/els](http://www.trentu.ca/els).



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