Environmental Sciences: MES, MSc, PhD

The School of Environmental Sciences (SES) offers a range of post-graduate programs geared to recent graduates, working professionals, and those interested in a research career. Our expertise spans several disciplines including apiculture, atmospheric and Earth sciences, ecology, entomology, environmental microbiology, plant pathology and protection, soil science, and environmental toxicology.

uoguelph.ca/ses

Programs

We offer two Master's options and a Doctoral program. The Master of Environmental Sciences (MES) consists of either course work or course work plus a major research paper (usually completed in three semesters). The Master of Science (MSc) consists of three courses and defense of a research-based thesis and is completed in six semesters. The PhD program requires the successful completion of one course, a qualifying exam and the completion and defense of a research-based thesis and is usually completed in twelve semesters.

Research Fields (PhD)

- Earth and Atmospheric Sciences
- Ecosystem Science and Biodiversity
- Plant and Environmental Health

Admission Requirements

Applicants require an honours science four-year degree, with a minimum "B-" (Master's) or A- (PhD) standing for the last four semesters completed prior to entry into the graduate program.

Funding

Students in the MSc program will receive a minimum funding of $16,500 per year over a 2-year eligibility period.

PhD students will receive a minimum funding of $20,500 per year over a 4-year eligibility period.

UNIVERSITY OF GUELPH

"I decided to pursue graduate studies at the University of Guelph because of the fantastic environmental toxicology program and I wanted to do research under my two advisors. I study aquatic toxicology, which is a big focus for my two research advisors so I was very excited to work with them."
– Moira Ijzerman (PhD Environmental Sciences + Toxicology)

Additional funding is available for NSERC scholars and International students and all students may be guaranteed one or several teaching assistantships worth an additional $3462 depending on their program and entering average.

Experiential Training

A central part of the MSc and PhD programs is the completion of a research project or thesis. Students will experience research first-hand under the supervision of a faculty advisor, which will involve formulating a research problem, collecting and analysing one or a combination of field and lab data, critical analysis and interpretation of those data in the context of existing literature. All students (including MES) can choose courses that are almost entirely field and lab-based, combining hands-on experience with the tools and methods for that field of study.

Application Deadline:
MES: see website for dates
MSc & PhD: Ongoing

ARE YOU INTERESTED IN:

- Impacts of climate change on agriculture & ecosystems
- Protection of plants & pollinators
- Soil science & soil health
- Ecological change & environmental health
- Water quality
- Environmental microbiology

CAREER OPPORTUNITIES:

- Environmental consultant
- Environmental education
- Public service in science & policy
- Regulatory affairs (industry & government)
- Research scientist or technician

CONTACT INFORMATION:

MES & PhD Program Coordinator:
Dr. Marc Habash
mhabash@uoguelph.ca

MSc Program Coordinator:
Dr. Youbin Zheng
yzheng@uoguelph.ca

Graduate Program Assistant:
Lauren Poland
519-824-4120 ext 52514
ses.gradsec@uoguelph.ca

Departmental Graduate Faculty with Research Areas

Madhur Anand: global ecological change, sustainability science, forest ecology, ecological modelling, biodiversity

Emmanuelle Arnaud: glacial geology, geology and groundwater, sedimentary geology, environmental geology

Asim Biswas: soil physics, vadose zone hydrology, precision agriculture, proximal soil sensing, digital soil mapping, soil spatial variability

Susan Chiblow: Indigenous knowledge systems, Indigenous law, Indigenous governance, women's knowledge, water

Catherine Dieleman: Organic soil biogeochemistry, ecosystem ecology, northern disturbance regimes, carbon quantity and quality, boreal forest resilience, peatlands

Kari Dunfield: environmental microbiology, microbial ecology, soil microbiology, bioremediation

Adam Gillespie: soil biochemistry, organic matter chemistry, soil health, carbon modelling, environmental spectroscopy, digital soil mapping

Brandon Gilroyed: anaerobic digestion; biorefinery; fermentation; industrial crops; waste valorization

Susan Glasauer: wetlands, metals, biogeochemistry, microbiology, soil chemistry

Paul Goodwin: ginseng, tobacco, soil, bacteria, fungi, molecular biology

Jackie Goordial: environmental microbiology, geomicrobiology, molecular ecology, bioinformatics, polar microbiology, climate change, astrobiology

Tom Graham: controlled environment agriculture, space biology, water remediation, food insecurity

Ernesto Guzman: bee biology, bee pathology, bee behaviour, bee genetics, bee ecology

Marc Habash: water quality, microbial source tracking, waterborne pathogens, microbial biofilms

Rebecca Hallett: integrated pest management, biological control, invasive insect species, insect-plant interactions, insect population dynamics

Richard Heck: pedology, computed tomography, structure, magnetic susceptibility

Tom Hsiang: turfgrass diseases, forest pathology, fungal genomics

Scott Krayenhoff: urban climate modelling, adaptation, trees

John Lauzon: soil science, soil fertility, soil management, nutrient management

James Longstaffe: environmental chemistry, natural organic matter, soil and groundwater contamination, remediation, analytical instrumentation

David MCarthy: environmental engineer focusing on the biosurveillance of pathogens in urban water systems and the development of methodologies to monitor and manage these to protect human health

Jesse Popp: Indigenous knowledge systems, wildlife ecology, two-eyed seeing

Ryan Prosser: mollusk biology, ecotoxicology, ecological risk assessment, aquatic toxicology, soil toxicology

Nigel Raine: pollinator conservation, pollinator behaviour, impacts of environmental stressors on bees, pollination ecology

Neil Rooney: food web stability, biodiversity, environmental assessment, aquaculture, agricultural effects

Cynthia Scott Dupree: sustainable pest management, entomology, ecotoxicology

Paul Sibley: toxicology, ecology, water quality, risk assessment

Jocelyn Smith: integrated management of insect pests of field crops (corn, soybeans, and wheat) and resistance management for insect-protected transgenic corn and insecticides.

Laura Van Eerd: sustainable soil management, agriculture, cover crops, nitrogen biogeochemical cycling, soil health

Claudia Wagner Riddle: soil-plant-atmosphere exchange, micrometeorology, biogeochemical cycling

Jon Warland: agricultural meteorology, measurement and modelling of atmospheric turbulent transport, environmental instrumentation

Andrew Young: Insect diversity, diptera taxonomy and phylogenetics, native pollinators, community science, insect identification

Youbin Zheng: cannabis production, controlled environment agriculture, greenhouse production, environmental horticulture

CONTACT INFORMATION:

MES & PhD Program Coordinator:
Dr. Marc Habash
mhabash@uoguelph.ca

MSc Program Coordinator:
Dr. Youbin Zheng
yzheng@uoguelph.ca

Graduate Program Assistant:
Lauren Poland
519-824-4120 ext 53937
ses.gradsec@uoguelph.ca

UNIVERSITY OF GUELPH