Leading the world.
Improving life.

Ontario Agricultural College
Graduate Studies Viewbook 2022/2023
We Acknowledge

The U of G resides on the ancestral lands of the Anishinaabe, Hodinohsoːni, Lūnaapēewak and Wendat peoples and the treaty lands of the Mississaugas of the Credit. We recognize the significance of the Dish with One Spoon Wampum to these lands and offer our respect to our First Nations, Inuit and Métis neighbours as we strive to strengthen our relationships with them.
# Table of Contents

## Welcome to OAC
Welcome to OAC ................................................................. 4  
Research at OAC ................................................................. 6  
Types of Graduate Programs ........................................ 12  
OAC Graduate Programs .................................................. 14  

## OAC Graduate Programs
Animal Biosciences .......................................................... 17  
Environmental Design & Rural Development ...................... 20  
Environmental Sciences .................................................... 25  
Food, Agricultural & Resource Economics ......................... 28  
NEW Masters of Dairy Technology Management ............... 31  
Food Science ......................................................................... 33  
Plant Agriculture .................................................................. 36  

## Graduate Resources
Funding & Financial Support ................................................ 39  
Graduate Faculty Advisors .................................................. 41  
Professional Skills Development ......................................... 43  
Immerse yourself in Guelph .................................................. 45
Welcome to OAC

The Ontario Agricultural College (OAC) of the U of G is recognized globally for its research excellence, teaching and knowledge extension in the broad areas of food, agriculture, communities and the environment.

“I invite you to explore OAC’s graduate programs and look forward to welcoming you to our community of world-class, innovative scholars! As a graduate student here, you will be inspired and engaged in discovery, knowledge generation, problem-solving, professional development and in making a significant contribution to your community and world around you.”

Dr. Rene Van Acker
Dean, Ontario Agricultural College

A long history of innovation

Established in 1874, OAC is a founding college of the University of Guelph. It has two campuses in Guelph and Ridgetown, Ontario, and research activities are supported and strengthened by a province-wide network of field stations and research facilities.

OAC is comprised of six academic units:

- Animal Biosciences
- Environmental Design and Rural Development
- Environmental Sciences
- Food, Agricultural and Resource Economics
- Food Science
- Plant Agriculture

Our community has a strong sense of shared purpose: To Improve Life by inspiring leaders, generating knowledge and creating innovative solutions for food, agriculture, communities and the environment.
A leader in academics, research, student support and professional development.

OAC at the U of G is well known for its warm and friendly campus atmosphere. U of G is frequently ranked as the best university in the province for its student support, learning and living environment. The university offers many opportunities for students to become involved in their community and gain leadership experience.

➢ #1 in Canada and #13 in the world for food sciences and technology*
➢ #1 in Canada and #17 in the world for agricultural sciences**
➢ #2 in Canada and #49 in the world’s top-notch universities in the field of plant and animal science**
➢ #3 in Canada and #50 in the world for environment/ecology*

*Source: news.uoguelph.ca/2020/07/u-of-g-programsrank-among-worlds-best/
** The U.S. News’ Best Global Universities rankings

“If institution rankings, research opportunities, or learning from some of the top names in the field were things you are seeking in a prospective university, look no further than OAC.”

Louis Colaruotolo
PhD, Food Science
Current Student
Research Excellence at OAC

U of G is one of the country’s most research-intensive universities and ranks as one of Canada’s top comprehensive research institutions. It is internationally regarded as a research leader, with research impact around the globe.

International in reputation, global in reach.

OAC’s research activities play a significant role in the University’s research profile. The College is recognized around the world for its research expertise in the areas of plant and animal production, sustainability and welfare, community and policy development and environmental studies and solutions.

OAC sits at the heart of an ever-growing agri-food industry that employs more than 800,000 people in the province. OAC delivers research, education and laboratory services in collaboration with many governmental partners such as the Ontario Agri-Food Innovation Alliance aiming to further the long-term global competitiveness and sustainability of Ontario’s agriculture and food system.
OAC is committed to internationalism and creating global citizens. Our researchers and scholars lend their expertise to solving the global problems and creating opportunities to improve lives abroad.

Global research projects in progress by faculty.

OAC is making research history

- Soil health, climate change and sustainable agriculture — through initiatives such as the new Soil Health Interpretive Centre (SHIC) and NSERC funded Climate-Smart Soils CREATE led by Dr. Claudia Wagner Riddle (School of Environmental Sciences)

- Improving food efficiencies and lowering methane emissions with genomics, Dr. Angela Canovas (Department of Animal Biosciences) identified specific functional markers in dairy cows for feed efficiency, these cows consume the same amount of feed than other cows, converting it into increased milk production while producing less methane.

- Dr. Keith Warriner (Department of Food Science) and post-doctoral researcher Mahdiyeh Hasani received 2020 Innovation of the Year Award for repurposing their food disinfection technology to clean personal protective equipment (PPE) during the COVID-19 pandemic.
Dr. Ryan Gibson and post-doctoral fellow Dr. Hernandez Gongora (School of Environmental Design and Rural Development) led the creation of the Provincial-Territorial-Federal Rural Policy Working Group, a collaborative network of rural policy analysts to collect and share the knowledge, and advance discussions on rural policy implications.

Dr. Sheri Longboat (SEDRD) and colleagues in the College of Social and Applied Human Sciences and the College of Arts are developing Nokom’s House, an Indigenous land-based learning lab in the Arboretum. Learn more about Nokom’s House: watch video here.

Graeme Reed has been named among the national 2020 top 30 under 30 sustainability leaders in Canada by Corporate Knights. His thesis, entitled Indigenous climate futures: Developing alternative visions for nature-based climate solutions, explores how Indigenous solutions can generate self-determined futures in the face of catastrophic change.

Graeme Reed  
PhD, Rural Studies  
Current Student  
Assembly of First Nations  
Senior Advisor
OAC has exceptional researchers, as demonstrated by our 5 Canada Research Chairs (CRC).

Dr. Christine Baes, CRC in Livestock Genomics

Dr. Kari Dunfield, CRC in Environmental Microbiology of Agro-ecosystems

Dr. Alejandro Marangoni, CRC in Food, Health and Aging

Dr. Trevor DeVries, CRC in Dairy Cattle Behaviour and Welfare

Dr. Michael Rogers, CRC in Food Nanotechnology

Dr. Kari Dunfield, CRC in Environmental Microbiology of Agro-ecosystems
Leading Researchers, World-Class Facilities

In addition to our Canada Research Chairs, OAC is home to NSERC Industrial Research Chairs and many Donor & Partner Supported Chairs and Professorships.

To support research being performed at OAC, our researchers have access to cutting-edge facilities and many Research Centres and Institutes, such as:

- The Arrell Food Institute
- Aquaculture Centre
- Bioproducts Discovery and Development Centre (BDDC)
- Campbell Centre for the Study of Animal Welfare (CCSAW)
- Canadian Research Institute for Food Safety (CRIFS)
- Centre for Agricultural Renewable Energy and Sustainability (CARES)
- Centre for Genetic Improvement of Livestock (CGIL)
- Centre for Land and Water Stewardship
- Centre for Nutrition Modelling
- Controlled Environment Systems Research Facility (CESRF)
- Dairy at Guelph
- Gosling Research Institute for Plant Preservation (GRIPP)
- Guelph Centre for Urban Organic Farming
- Guelph Turfgrass Institute
- Honey Bee Research Centre
- Institute for the Advanced Study of Food and Agricultural Policy

Check out our faculty and the research they perform!

OAC Faculty List and Areas of Study

Advance your career with access to a network of world class research facilities.

Research Centres and Institutes provide graduate students with hands-on experience and access to state-of-the-art equipment and facilities as they complete their PhD and Master’s research. The research conducted at these centres promote agri-food discoveries, validate laboratory findings, stimulate further research and provide valuable information for the agri-food sector and beyond.

Learn more about OAC’s research in The Why & How Podcast
New, iconic facility focused on supporting honey bee health

OAC will be home to a new, $12-million facility, that will be a ‘hive’ for all things related to honey bee health research, education, advocacy and outreach. #UofGHoneyBees

Learn More — Watch Video Here

The Government of Ontario announced that the Ontario Swine Research Centre will join the world-class Ontario Dairy Research Centre and Ontario Beef Research Centre at the Elora Research Station, making this cluster of facilities the epicenter of livestock research in Canada.

“OAC is home to an amazing range of programs and research initiatives — from pollinators to planning, craft beer to crop science, broadband to bovines, and everything in between, you will find someone exploring important questions within OAC.”

Ashleigh Weeden
PhD, Rural Studies
Current Student
Types of Graduate Programs

OAC has 17 master’s degrees — thesis and course-based options — and 10 PhD programs that focus on food, agriculture, communities and the environment, housed within six departments and schools.

Four ways to shape your future

Thesis-Based Masters

• ~2 years of full-time study*
• Research focused (minimal coursework)
• Submission of a thesis that contributes a novel tool or theory in a specific research area. Research conducted is an in-depth analysis of a scientific topic and could become a published paper.
• Finding a faculty advisor recommended prior to program application

Course-Based Masters

• 1 year of full-time study
• Coursework focused to develop a reasonable mastery of a specific area of study
• Faculty advisor not required prior to application

Course-Based Masters with Major Research Project

• 1–2 years of full-time study
• Combination of coursework and a major research project (MRP)
• A MRP is smaller in scope than a thesis project. The research does not need to be a novel contribution, but still thoroughly researched.
• Faculty advisor may be required prior to program acceptance
Doctor of Philosophy (PhD)

- ~4 years of full-time study*
- Research intensive
- Submission of a thesis that is a major contribution to the discipline. Research focus on a novel tool or theory in a specific research area.
- Finding a faculty advisor recommended prior to program application, required prior to acceptance
- Optional — Direct Entry — transfer from master's degree into a doctoral program

*Some disciplines may take longer to complete

Proof positive: OAC PhDs lead to careers with impact.

The OAC Doctoral Destinations Project documents graduates from OAC’s PhD programs from 1999 to 2019 and their career status as of 2019. By identifying the career pathways of our PhD graduates, we are able to illustrate their broad aptitudes and the many ways in which they’ve applied their educational and research experience to variety of careers.

# OAC Graduate Programs

## Department of Animal Biosciences*

<table>
<thead>
<tr>
<th>Level</th>
<th>Program</th>
<th>Delivery options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>MSc Animal Biosciences (Toxicology, Neuroscience, One Health)</td>
<td>Course Work, Thesis</td>
</tr>
<tr>
<td>Doctoral</td>
<td>PhD Animal Biosciences (Toxicology, Neuroscience, One Health)</td>
<td>Thesis</td>
</tr>
</tbody>
</table>

## Department of Plant Agriculture*

<table>
<thead>
<tr>
<th>Level</th>
<th>Program</th>
<th>Delivery options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>MSc Plant Agriculture (International Development Studies)</td>
<td>Thesis</td>
</tr>
<tr>
<td>Doctoral</td>
<td>PhD Plant Agriculture (International Development Studies)</td>
<td>Thesis</td>
</tr>
</tbody>
</table>

## Department of Food Science*

<table>
<thead>
<tr>
<th>Level</th>
<th>Program</th>
<th>Delivery options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>MSc Food Safety and Quality Assurance (Toxicology, One Health)</td>
<td>Course Work, Online</td>
</tr>
<tr>
<td>Masters</td>
<td>MSc Food Science (Toxicology, One Health)</td>
<td>Thesis</td>
</tr>
<tr>
<td>Masters</td>
<td>Master of Dairy Technology Management (MDTM)</td>
<td>Course Work, Online</td>
</tr>
<tr>
<td>Doctoral</td>
<td>PhD Food Science (Toxicology, One Health)</td>
<td>Thesis</td>
</tr>
</tbody>
</table>
## Department of Food, Agricultural & Resource Economics*

<table>
<thead>
<tr>
<th>Degree Level</th>
<th>Course Title</th>
<th>Delivery Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>Master of Food, Agricultural and Resource Economics (MFARE) (International Development Studies)</td>
<td>Course Work</td>
</tr>
<tr>
<td>Masters</td>
<td>MSc Food, Agricultural &amp; Resource Economics (International Development Studies)</td>
<td>Thesis</td>
</tr>
<tr>
<td>Doctoral</td>
<td>PhD Food, Agricultural &amp; Resource Economics (International Development Studies)</td>
<td>Thesis</td>
</tr>
</tbody>
</table>

## School of Environmental Design & Rural Development*

<table>
<thead>
<tr>
<th>Degree Level</th>
<th>Course Title</th>
<th>Delivery Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>MSc Capacity Development and Extension (International Development Studies)</td>
<td>Course Work, Thesis</td>
</tr>
<tr>
<td>Masters</td>
<td>Master of Landscape Architecture (MLA)</td>
<td>Thesis</td>
</tr>
<tr>
<td>Masters</td>
<td>MSc Rural Planning &amp; Development (One Health, International Development Studies)</td>
<td>Course Work, Thesis</td>
</tr>
<tr>
<td>Masters</td>
<td>Master of Rural Planning &amp; Development (MPLAN) (One Health, International Development Studies)</td>
<td>Course Work</td>
</tr>
<tr>
<td>Doctoral</td>
<td>PhD Rural Studies</td>
<td>Thesis</td>
</tr>
</tbody>
</table>
### School of Environmental Sciences*

<table>
<thead>
<tr>
<th>Level</th>
<th>Program</th>
<th>Delivery options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>Master of Environmental Sciences (MES) (Toxicology, One Health)</td>
<td>Course Work</td>
</tr>
<tr>
<td>Masters</td>
<td>MSc Environmental Sciences (Toxicology, One Health)</td>
<td>Thesis</td>
</tr>
<tr>
<td>Doctoral</td>
<td>PhD Environmental Sciences (Toxicology, One Health)</td>
<td>Thesis</td>
</tr>
</tbody>
</table>

### Collaborative Specializations
(can be added to a participating degree program)

<table>
<thead>
<tr>
<th>Specialization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Development Studies</td>
<td>This collaborative specialization provides a focal point for graduate teaching and research in the area of international development that combines training in a particular discipline with exposure to a broad range of social science perspectives.</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>A collaborative specialization that fosters strong collaborative efforts between faculty and students working across various levels of analysis, including molecular, cellular, systems, and behavioural research.</td>
</tr>
<tr>
<td>One Health</td>
<td>This collaborative specialization prepares future leaders for the complex challenges at the confluence of human, animal, and environmental health, working across disciplinary boundaries, conducting multidisciplinary research, mobilizing knowledge, and informing policy.</td>
</tr>
<tr>
<td>Toxicology</td>
<td>This collaborative specialization encompasses broad and diverse fields of study such as ecosystem health, including water, air and soil quality, plant health, microbes, and insects, sustainable agriculture and human and animal health.</td>
</tr>
</tbody>
</table>
Animal Biosciences

A career in animal science starts here.

Research and educational programs in the Department of Animal Biosciences revolve around the basic sciences relevant to animal development and well-being.

<table>
<thead>
<tr>
<th></th>
<th>MSc (Coursework)</th>
<th>MSc (Thesis)</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>1 year</td>
<td>2 years</td>
<td>3 – 5 years</td>
</tr>
<tr>
<td><strong>Advisor Required at Application</strong></td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Degree Requirement</strong></td>
<td>Honours bachelor's degree in sciences (or equivalent)</td>
<td>Honours bachelor's degree in sciences (or equivalent)</td>
<td>An MSc degree</td>
</tr>
<tr>
<td><strong>Admission Requirement</strong></td>
<td>Minimum of 73% (B) during last two years of undergraduate study</td>
<td>Minimum of 73% (B) during last two years of undergraduate study</td>
<td>A minimum of 73% (B) average</td>
</tr>
<tr>
<td><strong>Application Deadline</strong></td>
<td>Ongoing</td>
<td>Ongoing</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Entry</strong></td>
<td>Fall</td>
<td>Fall, Winter, Summer</td>
<td>Fall, Winter, Summer</td>
</tr>
</tbody>
</table>

**Fields of Research**

- Animal Breeding and Genetics
- Animal Nutrition
- Animal Physiology
- Animal Behaviour and Welfare
Students and faculty have access to high quality animal research facilities, a modern and federally inspected meats laboratory, and a range of laboratory facilities in genomics, nutrient analyses, physiology, and microbiology. The department also has unique on-campus large farm animal study rooms and surgical recovery facilities for animal research.

Students are very successful after they graduate. Within 6 months of graduating, over 90% of Animal Biosciences graduates go on to future training or careers related to their program.

Find out more about our faculty here

**MSc Animal Biosciences**

There are two ways to complete your master’s program within the Department of Animal Biosciences: MSc by course work or MSc by thesis.

The MSc coursework is a 1-year program for specialized training in different aspects of the animal sciences.

The MSc by thesis program is a 2-year program designed for students interested in advanced research.

The innovative research conducted ranges from the applied (designed to solve practical problems in animal agriculture) to discovery-focused, cutting-edge research aimed at testing fundamental hypotheses in animal biology.

Find out more about our research here

**Interested in a PhD program? Find out more here**

Find out more about our PhD program here

Graduate programs offer “hands on” experiential learning opportunities for research with a large selection of livestock animals, equine, companion animals, wildlife, aquatic and more to complement a wide range of graduate courses.

**Graduate Program Assistant contact**
Jacob Harwood | harwood@uoguelph.ca
“Not only is graduate school an awesome experience, but completing a graduate degree is an excellent way to differentiate yourself and make you more desirable for potential employers. The soft skills you develop during graduate school such as teamwork, communication, problem solving, and critical thinking are skills that are not necessarily developed during your undergraduate degree.”

Natalie Asaro  
MSc, Companion Animal Nutrition  
Alumni  
Nutrition Manager, Petcurean Pet Nutrition

“I work with some very exciting and sometimes unpredictable animals, and I get to work with some very exciting and sometimes unpredictable graduate students! We have a lot of fun in our lab. We do a lot of varied work and research, and it’s that variability that I think makes it so exciting for me and for the people I work with.”

Find out more about Dr. Pearson here

Dr. Wendy Pearson  
Associate Professor  
Physiology of equine diseases, cartilage biology, nutraceuticals
Environmental Design &
Rural Development

Designing a future of strong, sustainable communities.

The School of Environmental Design & Rural Development (SEDRD) reflects the imperatives in building authentic communities where planners, leaders, communicators, landscape architects, the citizens and politicians all play important interdependent roles in community strength.

<table>
<thead>
<tr>
<th></th>
<th>MLA</th>
<th>MSc CDE</th>
<th>MSc (Planning)</th>
<th>MPlan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>3 years</td>
<td>4 – 6 semesters</td>
<td>2 years</td>
<td>1 year</td>
</tr>
<tr>
<td>Advisor Required at Application</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Funding</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Degree Requirement</td>
<td>An honours bachelor’s degree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admission Requirement</td>
<td>Minimum of 70% (B-) during last two years of undergraduate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application Deadline</td>
<td>January 31</td>
<td>March 1 (international applicants)</td>
<td>March 31</td>
<td>September 30 (Winter Entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May 30 (domestic applicants)</td>
<td></td>
<td>January 30 (Summer Entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>May 30 (Fall Entry)</td>
</tr>
<tr>
<td>Entry</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall, Winter, Summer</td>
</tr>
</tbody>
</table>
Programs of Study:

- Capacity Development and Extension
- Landscape Architecture
- Rural Planning and Development
- Rural Studies PhD

Find out more about our faculty here

MSc Capacity Development and Extension (CDE)

This program is unique in Canada and focuses on processes of learning, advocacy, leadership, communication and capacity development for rural, remote and small communities in Canada and around the world. Students develop core competencies for facilitating social and environmental change. In addition to coursework, students write either a thesis or major research paper. The thesis option requires the completion of 6 courses in addition to the thesis, while the major paper option requires the completion of eight courses and the major research paper.

Find out more about CDE research here

Master of Landscape Architecture (MLA)

Unique in being an accredited graduate degree, the MLA program is for those seeking a master’s degree from an intensive, internationally recognized design program within the University of Guelph; home to Canada’s first-established professional degree program in landscape architecture.

The MLA curriculum has three integrated streams: design theory and practice, landscape analysis and planning, and research inquiry and application. The final year of the MLA program is focused on the individual interests of each student and on completion of a master’s thesis. Internships and summer employment opportunities provide students with paid professional experience in some of North America’s most prestigious firms.

Find out more about MLA research here

Graduate Program Assistant contacts
MLA
Diana Foolen | dfoolen@uoguelph.ca

CDE, MPLAN, MSc Planning
Lorena Barker | cde@uoguelph.ca | rpd@uoguelph.ca
“As an MLA graduate student, you will feel the benefits of smaller class sizes, where professors/instructors know your name, are accessible, and make themselves available to their students, ultimately to see them succeed.”

Courtney Plato  
MLA Master of Landscape Architecture  
Alumni  
NAK Design Strategies  
Project Coordinator

“Communication and learning are rarely central but entirely fundamental to agricultural innovation, socio-economic and environmental well-being, and ultimately, the sustainability of all life on Earth. I enjoy working with graduate students who are scholar-practitioners taking a system view on local and global challenges.”

Find out more about Dr. Hambly here

Dr. Helen Hambly  
Professor and Project Lead Regional and Rural Broadband project  
Global agriculture and rural research and development; communication and innovation processes
Rural Planning & Development

Within the Rural Planning & Development program there are two graduate degrees: a Master of Science in Rural Planning and Development (MSc) and Master of Planning (MPlan). Both programs provide the opportunity for graduate study, research and professional development in rural planning and development in either Canadian or international contexts.

MSc Rural Planning and Development

This 2-year program is intended for students with a completed undergraduate degree interested in planning and development. Students focus their program of study in either the Canadian or International stream. The program can be completed with a thesis, major research paper, or as a course-based option. The MSc program is an accredited degree by the Professional Standards Board, facilitating membership in the Canadian Institute of Planners and provincial planning organizations.

Find out more about Planning research here

Master of Planning (MPlan)

This 1-year program is intended for students with a completed undergraduate degree and 4 – 5 years of planning and development experience, who wish to upgrade their professional training to the Masters level without necessarily withdrawing from the work force. The MPlan program is offered in-class or via online learning, and offers students the opportunity to specialize in either the Canadian or International stream.

Canadian Stream

The focus is on rural, Indigenous, and remote communities in Canada. Students gain critical knowledge and skills sets in planning theory, planning law, plan formation, implementation, project management, and evaluation. These skills are developed and demonstrated through community-based course projects, case studies, and student research.

International Stream

Prepares students for practice and research in rural and regional development planning in the international context. It focuses on the rural regional dimension within a national or global context, in particular the policy, planning and management processes that are driving development interventions. It emphasizes applied research and practice based on a firm foundation of theory.
Interested in a PhD program? Find out more here

Find out more about our PhD program here

Rural Studies PhD

The Rural Studies PhD provides opportunities for advanced studies and research on the integration of socio-cultural and bio-physical components of capacity development, design, or planning of landscape systems and rural communities. Graduates become leading specialists in addressing sustainable landscapes and issues related to rural communities.

Graduate Program Assistant contact
Lorena Barker | rsphd@uoguelph.ca

“Through my research I have been able to explore and speak to unique individuals. I have spoken to elders that have essentially never left their communities or land. I get to talk to them about where they were born, what they ate, and the changes they’ve seen over time. What an immense privilege that it is to talk to people who see the world in such a unique way.”

Dr. Nicolas Brunet
Latornell Professor in Environmental Stewardship
Community-based conservation, natural resource governance and sustainable community development
Excellence in environmental science: make a difference to the world.

The School of Environmental Sciences (SES) uniquely integrates the physical and life sciences to address important environmental problems in agricultural, forest, and aquatic ecosystems.

<table>
<thead>
<tr>
<th></th>
<th>MES (Coursework*)</th>
<th>MSc (Thesis)</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>1 year</td>
<td>2 years</td>
<td>3 – 5 years</td>
</tr>
<tr>
<td>Advisor Required at Application</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Funding</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Degree Requirement</td>
<td>Honours bachelor’s degree in sciences (or equivalent)</td>
<td>Honours bachelor’s degree in sciences (or equivalent)</td>
<td>An MSc degree</td>
</tr>
<tr>
<td>Admission Requirement</td>
<td>Minimum of 70% (B-) during last two years of undergraduate study</td>
<td>Minimum of 70% (B-) during last two years of undergraduate study</td>
<td>A minimum of 85% (A-) average</td>
</tr>
<tr>
<td>Application Deadline</td>
<td>February 1 (International applicants) April 30 (Domestic applicants)</td>
<td>Ongoing</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Entry</td>
<td>Fall</td>
<td>Fall, Winter, Summer</td>
<td>Fall, Winter, Summer</td>
</tr>
</tbody>
</table>

*MES Options: Courses + Major Research Project (6 courses) or Courses only (8 courses).
Fields of Research:

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

Award winning faculty and research expertise spans several disciplines including apiculture, atmospheric and earth sciences, ecology, environmental microbiology, entomology and pest management, plant pathology and protection, soil science, and environmental toxicology.

Find out more about our faculty here

Master of Environmental Sciences (MES)

This program focuses on the most recent theoretical and technical advances in environmental science, through interdisciplinary and multidisciplinary teaching and research, to provide students with both a depth and breadth of knowledge. Students will develop critical thinking and communication skills so that they can excel in a career with industry, government or in the not-for-profit sector.

MSc Environmental Sciences

The objective of this thesis-based program is to develop graduates with a high level of knowledge and expertise in specific aspects of environmental science, training in laboratory and field techniques, and excellence in written and oral communication. Graduates will possess a strong foundation on which they can be highly successful in science-related positions in government, industry, and consulting, or carry out high quality research at the PhD level.

Find out more about our research here

Interested in a PhD program? Find out more here

Find out more about our PhD program here

Graduate Program Assistant contact
ses.gradsec@uoguelph.ca
"The real benefit of completing post-graduate work is not the knowledge you obtain from the degree, but the skills and confidence you gain by completing something so difficult to obtain. By achieving a post-graduate degree, you demonstrate to future employers these traits. Material can be learned anywhere, the skills you develop in graduate school are earned."

Brandon Yep  
MSc, Environmental Sciences  
Alumni Canopy Growth Corporation  
Extension Agronomist

"When working as an agrometeorologist I had the opportunity to visit the University of Guelph campus. My short visit inspired me to pursue my PhD in the School of Environmental Sciences, where I have stayed ever since! I really enjoy all aspects of my work: teaching, research and contributing to my scientific community."

Find out more about Dr. Riddle here

Dr. Claudia Wagner Riddle  
Professor  
NSERC Create Climate-Smart Soils  
Soils at Guelph Executive Team Member
Food, Agricultural & Resource Economics  

Training tomorrow’s research and policy leaders.  

Graduate students in the Department of Food, Agricultural & Resource Economics (FARE) study issues related to trade, policy, resources and new technologies. The scope of study incorporates all parts of the food system from farm to fork.

<table>
<thead>
<tr>
<th></th>
<th>MFARE (Coursework)</th>
<th>MSc (Thesis-based)</th>
<th>PhD (Thesis-based)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>1 year</td>
<td>2 years</td>
<td>4 years</td>
</tr>
<tr>
<td><strong>Advisor Required at Application</strong></td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td>✗*</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Degree Requirement</strong></td>
<td>Honours bachelor’s degree in FARE/economics</td>
<td>Honours bachelor’s degree in FARE/economic</td>
<td>A Master’s degree equivalent to the MSc in FARE*</td>
</tr>
<tr>
<td><strong>Admission Requirement</strong></td>
<td>Minimum of 70% (B-) during last two years of undergraduate study</td>
<td>Minimum of 70% (B-) during last two years of undergraduate study</td>
<td>A minimum of 73% (B) average</td>
</tr>
<tr>
<td><strong>Application Deadline</strong></td>
<td>February 1</td>
<td>February 1</td>
<td>February 1</td>
</tr>
<tr>
<td><strong>Entry</strong></td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
</tr>
</tbody>
</table>

*MFARE students may be eligible for funding, but it is not guaranteed
Fields of Research:

- Food and agricultural economics
- Natural resource and environmental economics

Students apply their rigorous training and research experience in a number of rewarding ways. Through their research, students gain an appreciation of the policy environment within which provincial, federal and private organizations exist, and are prepared for successful careers in the government, academia and private sectors upon graduation.

Find out more about our faculty here

Master of Food, Agricultural & Resource Economics (MFARE)

This course-based program provides graduate education related to the economics of food, agriculture, and natural resources, with an emphasis on skills acquisition and development of industry-specific expertise.

A research option is available to add onto this program. MFARE students are eligible for funding, but it is not guaranteed.

MSc Food, Agricultural & Resource Economics (MSc FARE)

The MSc develops fundamental understanding of economic principles and their application in identifying and solving relevant problems related to food, agriculture, and natural resources. The program develops appropriate analytical, methodological, and communication skills for students to analyze agriculture and resource problems effectively and explain their findings.

Find out more about our research here

Interested in a PhD program? Find out more here

Find out more about our PhD program here

FARE has strong links internationally. Graduate students in the department are drawn from North America, Europe, Latin America, Africa and Asia. The multicultural nature of the graduate student body enriches the experience of both students and faculty in the department.
“I would highly recommend pursuing a graduate degree from the OAC since it builds a solid foundation for you to explore many different career paths. I have had the opportunity to work in both public and private sectors because of my research in the OAC.”

Karthik Nadelle
MSc, Food, Agricultural & Resource Economics
Alumni
Partnership Analytics
RBC Ventures

“Agriculture is at the nexus of a lot of major social issues; poverty, health issues, and the environment. In each of those issues agriculture plays a major role. My research looks at the effects of new technology and government policy on farmers decisions, and the impact of those decisions on the environment and markets.”

Find out more about Dr. Weersink here

Dr. Alfons Weersink
Professor
Agricultural economics; economic impacts of new technology and government policy on agricultural structure
NEW Interdisciplinary Program

For the future leaders of the dairy industry.

The Master of Dairy Technology Management (MDTM) program, a new collaborative program launching Fall 2022, aims to produce the highly qualified personnel needed to lead the growing local, national and the international dairy industries into the future.

<table>
<thead>
<tr>
<th>Coursework + Major Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
</tr>
<tr>
<td>Advisor Required at Application</td>
</tr>
<tr>
<td>Funding</td>
</tr>
<tr>
<td>Degree Requirement</td>
</tr>
<tr>
<td>Admission Requirement</td>
</tr>
<tr>
<td>Application Deadline</td>
</tr>
<tr>
<td>Entry</td>
</tr>
</tbody>
</table>

*Recommended preparation courses are FOOD*2010 Principles of Food Science or equivalent, and MATH*1030 Business Mathematics or equivalent.

Master of Dairy Technology Management

This unique program provided by the Departments of Food Science and Food, Agricultural & Resource Economics, brings together global expertise to delve into the essentials of dairy science, dairy plant operations, dairy products, agri-food economics, food safety and quality management, operations management, and supply and value chain management.
The Master of Dairy Technology Management is an interdisciplinary program that blends three major overarching competencies:

- Dairy Science and Technology
- Management of Operations, Food Safety Systems and Quality Assurance
- Marketing and Business Management

Designed to optimize accessibility, this course is delivered **fully online**.

The concentrated curriculum can be completed in 1 year with a full-time course load, or taken part-time over 2–3 years.

The program consists of 6 courses and a major capstone project:

- International Food Industry and Policy Analysis
- Assessment of Food and Agricultural Technologies
- Dairy Chemistry and Microbiology
- Dairy Products and Processes
- Dairy Technology Management Projects

Find out more about this program [here](mailto:mdtm@uoguelph.ca)

**Graduate Program Assistant contact**
Kay Norwell  | mdtm@uoguelph.ca
Food Science

Where leading food scientists get a nourishing start.

With a focus on developing sustainable, safe and innovative foods aimed at improving human health, the Department of Food Science conducts interdisciplinary research spanning the fields of chemistry, biology, natural product chemistry, microbiology, nanoscience, physics and nutritional science.

<table>
<thead>
<tr>
<th></th>
<th>MSc FSQA (Coursework)</th>
<th>MSc (Thesis)</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>1 year</td>
<td>2 years</td>
<td>3 – 5 years</td>
</tr>
<tr>
<td>Advisor Required at Application</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Funding</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Degree Requirement</td>
<td>Honours bachelor’s degree in sciences (with courses in food science, nutrition, public health or other related fields)</td>
<td>Honours BSc degree in Food Science, Chemistry, Biology, Microbiology, Physics, or other related degree</td>
<td>An MSc degree</td>
</tr>
<tr>
<td>Admission Requirement</td>
<td>Minimum of 73% (B) during last two years of undergraduate study</td>
<td>Minimum of 73% (B) during last two years of undergraduate study</td>
<td>A minimum of 73% (B) average</td>
</tr>
<tr>
<td>Application Deadline</td>
<td>July 1 (Domestic applicants) November 1 (International applicants)</td>
<td>July 1 (Fall), November 1 (Winter) March 1 (Summer)</td>
<td>July 1 (Fall), November 1 (Winter) March 1 (Summer)</td>
</tr>
<tr>
<td>Entry</td>
<td>Fall</td>
<td>Fall, Winter, Summer</td>
<td>Fall, Winter, Summer</td>
</tr>
</tbody>
</table>
Fields of Research

- Food Production
- Food Nutrition
- Food Microbiology
- Food Chemistry

The Food Science program at OAC is the only one of its kind in Ontario and has trained a large percentage of the food scientists currently employed in Ontario’s food and beverage industry; the third largest in North America.

Facilities include individual laboratories, teaching laboratories, a core laboratory (focusing on analytical chromatography), a state-of-the-art dairy processing plant, an experimental kitchen, a newly renovated food processing facility and a level II biosafety facility.

Meet our Food Science faculty here

MSc Food Safety and Quality Assurance (FSQA)

This course-based graduate program is designed to provide a balance of scientific and management principles underlying Food Safety and Quality Assurance. This program is intended for those currently employed as food scientists, food engineers, public health or food safety inspectors, as well as those who have recently graduated from programs with appropriate scientific backgrounds. Students may take this program in one of two formats: a combination of online and on campus courses with a faculty advisor-led research project; or fully online with an approved workplace project.

MSc Food Science

Graduates will gain general scientific knowledge as well as a more in-depth understanding of various aspects of food science. Extensive laboratory and technical training is obtained by conducting experiments under the supervision of world-renowned faculty.

Find out more about our research here

Whether fresh fruits, vegetables or meats, frozen foods, dairy products, cereals or beer and wine, food scientists have transformed these products from raw ingredients to consumer goods.

Interested in a PhD program? Find out more here

Find out more about our PhD program here
Graduate Program Assistant contacts
FSQA Program Assistant
Kay Norwell | fsqa@uoguelph.ca

MSc and PhD Program Assistant
Tricia Townsend | Tricia.townsend@uoguelph.ca

“Coming from an industrial field of food safety leadership, I found the course outline to be intriguing and was confident this master’s program would boost my existing skills and moreover help me get a global exposure on food safety and learn new skills.”

Vijay Issac
MSc, Food Safety & Quality Assurance
Current Student

“Our relationship with food is such a vital component of our health and microbes play a big role in how to diversify our food and maintain a healthy gut ecosystem”.

Find out more about Dr. LaPointe here

Dr. Gisele LaPointe
Professor
NSERC/Dairy Farmers of Ontario Industrial Research Chair in Dairy Microbiology
Improving the quality and functionality of food
Plant Agriculture

Dig deep into the science of agriculture.

Strongly rooted in crop and horticultural science, graduate studies within the Department of Plant Agriculture encompasses applied bioinformatics; molecular genetics; genomics; field, horticultural and greenhouse crops; plant breeding; turf and grassland studies; environmental sustainability; weed science/ecology; and the use of plant materials for health, fibers and industrial products.

<table>
<thead>
<tr>
<th></th>
<th>MSc (Thesis)</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>2 years</td>
<td>3–5 years</td>
</tr>
<tr>
<td>Advisor Required at Application</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Funding</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Degree Requirement</td>
<td>An honours bachelor’s degree in a plant science or biology program (or equivalent)</td>
<td>MSc degree by thesis in a field appropriate to the proposed area of specialization</td>
</tr>
<tr>
<td>Admission Requirement</td>
<td>A minimum of 73% (B) average during last two years of undergraduate study</td>
<td>A minimum of 73% (B) average</td>
</tr>
<tr>
<td>Application Deadline</td>
<td>Ongoing</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Entry</td>
<td>Fall, Winter, Summer</td>
<td>Fall, Winter, Summer</td>
</tr>
</tbody>
</table>
Fields of Research

- Plant Breeding and Genetics
- Plant Biochemistry and Physiology
- Crop Production Systems
- Bioproducts

The Department of Plant Agriculture has modern labs with state-of-the-art equipment and access to the controlled environment growth facilities and numerous field sites distributed over Ontario. Graduate students are provided hands-on learning opportunities from nationally and internationally recognized experts.

Find out more about our faculty here

MSc Plant Agriculture

This two-year program requires students to complete a research-based thesis with a specialization in one of four broad fields within plant science. Students develop an understanding of plant growth and development, weed control, and plant-environment interactions. Research for one’s thesis could focus on how to increase plant production efficiency, development of new crop varieties, or discovering new environmentally friendly industrial materials.

Find out more about our research here

Interested in a PhD program? Find out more here

Find out more about our PhD program here

---

Canada’s largest and most diverse applied plant biology department and the largest research department at the University of Guelph.

Graduate Program Assistant contact
Tara Israel | pgrad@uoguelph.ca
“By joining the Department of Plant Agriculture, I knew I would be in a supportive environment where I could receive first-hand experience working with farmers, as I want to do everything I can to support Ontario producers.”

Erika DeBrouwer
MSc, Plant Agriculture
Alumni
Ontario Ministry of Agriculture, Food and Rural Affairs Tree Fruit Specialist

“As the Director of the Gosling Research Institute for Plant Preservation (GRIPP), I get to work with graduate students interested in plant development, new plant products and crops, and international research programs in collaboration with other renowned institutes all over the world.”

Find out more about Dr. Saxena here

Dr. Praveen Saxena
Professor
Director of the Gosling Research Institute for Plant Preservation
Regulatory signals modulating plant development and stress, in vitro propagation
Funding & Financial Support

OAC is committed to improving access to education and encouraging student wellness by creating an environment that supports and nurtures the student as a whole.

Cost of Tuition/Living

“I have found studying at the OAC to be very supportive as the department does its best to identify new grants, trainings and flexible learning to make education accessible to all, especially for women with diverse systemic barriers.”

Victoria Agyepong
MSc Rural Planning and Development
Current Student
Skills for Change of Metro Toronto
Supervisor, Labour Market Analysis and Employer Engagement

Dedicated to student success

OAC prides itself in attracting and recruiting the best students by acknowledging and rewarding their accomplishments.

As a research-intensive institution, we place great importance on helping students finance their education. We seek to allow students to devote their full energy to the successful completion of their program and strive to ensure that stable funding is available.

To support these commitments, OAC’s programs offer a minimum stipend, a significant range of scholarships, bursaries, awards and travel grants, as well as other funding opportunities. Some funding is awarded upon admission to a program or is based on recommendations from the admitting program.
Funding for Thesis-based Programs

Thesis-based graduate students receive a funding package made up of a number of components such as some or all of the following: Graduate Stipend, Graduate Teaching Assistantships (GTAs), Graduate Research Assistantships (GRAs), Graduate Service Assistantships (GSAs), plus scholarships/awards (internal or external).

OAC Internal and External Graduate Student Awards

Students must apply directly for internal OAC Awards, and University Awards. A comprehensive listing of University of Guelph internal graduate awards is available on the [Graduate Award Search page](#).

OAC graduate students are also highly successful in receiving external scholarships. Graduate students in OAC are encouraged to review and apply to various external scholarship opportunities.

[Find out more about applying for Scholarships here](#)

**Awards Contact**

oacaward@uoguelph.ca

OAC awarded $3,025,000 in Scholarships and Awards to OAC Graduate Students in 2019/2020. Over half of OAC graduate students hold at least one award thanks to the generous support of our alumni and donors.
Graduate Faculty Advisors

Faculty advisors guide, inspire, and support their students to reach their scholarly potential. The advisor promotes conditions conducive to student’s research and intellectual growth, providing appropriate guidance on the progress of the research and the standards expected.

Real world research, guided by real world researchers.

Graduate programs with a thesis or major research paper (MRP) component require a faculty advisor. Thesis students should identify and confirm their faculty advisor prior to application, whereas major research paper students typically find an advisor after starting their program. When reviewing and researching potential advisors, here are a few things to keep in mind:

• Are you interested in their research?
• Does their research align with your learning and career goals?
• What is their advising style?
• Is there funding available?

Finding a Faculty Advisor

1. Explore the OAC faculty members page and identify potential professors you would like to work with.
2. Reach out via email to request a meeting with potential advisors to discuss your research interests and future research project opportunities in their lab.
3. Important information to include in your initial contact:
   • Your academic and professional background (include your academic CV)
   • Your research experience and interests
   • Why you are interested in working with them
   • If you have received or applied for any scholarships

Tip: Reach out to current graduate students who have worked with your potential advisor. This will give you the graduate student’s perspective on the lab and research.
“When looking for a faculty advisor set up meetings with multiple potential advisors to understand the research projects they offer. It is helpful when deciding between advisors to answer a) do I see myself working well with this advisor and, b) is the research project I would complete with them interesting and rewarding for me as a researcher?”

Chris Budd
MSc, Plant Agriculture
Alumni
Field Biologist
BASF Canada
Professional Skills Development, Social & Wellness Opportunities

OAC prioritizes opportunities for graduate student development, wellness and building a strong student community.

There are a multitude of opportunities for OAC graduate students to engage and develop their personal and professional networks, skills and knowledge, a few examples of which are outlined here.

Come be a part of our thriving community and discover your place.

“The OAC community provided me with the opportunity to work with a diverse group of people in terms of their gender, culture, race, interests, sexual orientations, and skills.”

Mohsen Yoosefzadeh Najafabadi
PhD Plant Agriculture
Alumni
Research Associate
Ontario Agricultural College
Past Vice President Internal,
Graduate Student Association

Grad Pathways

Grad Pathways is the University of Guelph’s resource hub specifically designed to support the academic, research, personal, and professional success of our graduate students and post-doctoral fellows.

Find out more here
3 Minute Thesis (3MT)

The 3 Minute Thesis competition assists students with building great communication skills by presenting their research and its wider impact in 3 minutes or less. It challenges students to present complex research in an engaging, accessible and compelling way. OAC graduate students have excelled with several winning not only the University-wide competition but both the provincial and national competitions as well.

International Exchange and Travel

As a graduate student, you may broaden your horizons with the opportunity to visit or study at another institution in Canada or abroad. The Ecuador field school (find out more about Field School here) is just one of countless examples of the graduate student travel opportunities.

Find out more here

OAC Graduate Student Councils

OAC’s graduate student community has strong connections and countless opportunities to build your network through engagement with your graduate student councils. Graduate Student Councils enhance student experience by hosting academic and social events throughout the year and promote an engaging and collaborative environment within the departments.

Find out more about OAC graduate clubs here

“I like presentations, teaching, and outreach, especially to different groups of people. If we as scientists can successfully communicate our knowledge in a way people understand and feel engaged with, they are more likely to share that information.”

Sara Stricker
PhD Plant Agriculture
Alumni
Communications and Outreach Coordinator
Guelph Turfgrass Institute
2020 1st place in UofG 3MT competition,
4th place in provincial 3MT competition
Immerse yourself in Guelph

Welcome to one of Ontario’s fastest growing, best run cities: Guelph, Ontario. With a population of over 135,000, you’ll get the feeling of a major community and the welcome of a smaller town. The architecture is rich, the downtown core is vibrant, the legacy and cultural diversity is strong, and the community and campus are interconnected. To learn more about Life at Guelph visit graduatestudies.uoguelph.ca/about/life-guelph

Ridgetown Campus is located in southwestern Ontario (1 hour south-west of London, ON and 1 hour east of Windsor, ON). It is a safe, quiet, and friendly community of 3,500 people where you will get to see the bounty of local agriculture and small-town living.

Climate

4 distinct seasons

Spring: mid-March to May
10° to 20° C (some rain)

Summer: June to August
20° to 30° C (humid)

Fall: September to November
7° to 20° C (some rain)

Winter: December to mid-March
-15° to 2° C (snow, sunny)

Arriving in Canada

Travel time by air to Toronto*

- New York 1 hr
- Vancouver 5 hrs
- Bogota 6 hrs
- London 7 hrs
• Amsterdam 7.5 hrs
• Frankfurt 7.5 hrs
• Paris 8 hrs
• Istanbul 10 hrs
• Dubai 13 hrs
• Beijing 13.5 hrs
• Hong Kong 14.5 hrs
• Delhi 16 hrs
• Tehran 16.5 hrs
• Port Louis 21 hrs

*Guelph is a one-hour drive from Toronto's Pearson International Airport. Shuttle service can be arranged to bring you directly to campus. redcarservice.com

Getting around

GO Bus transit connects the University Centre to the Greater Toronto Area and Mississauga, throughout the day during weekdays. gotransit.com
Contact or visit us!

Important Note: Amid the uncertainty around the COVID-19 pandemic, some programs, services and/or options offered at the U of G may change or be unavailable. Continue to check admission.uoguelph.ca/admission-related-faqs-during-covid-19-pandemic for admission-related information, and news.uoguelph.ca/2019-novel-coronavirus-information/ for all other University-related information.