

# Plant Agriculture: MSc, PhD

Plants provide food, raw materials, and a healthy environment, and are the cornerstone for life on earth. Plant Science is key to understanding and enhancing plant life. Research in the Department of Plant Agriculture is divided into four areas: Plant Biochemistry and Physiology, Plant Breeding and Genetics, Crop Production Systems, and Bioproducts.

[plant.uoguelph.ca](http://plant.uoguelph.ca)

## Program

Plant Agriculture is strongly rooted in crop science and horticultural science but we now encompass 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, fibres and industrial products. Furthermore, we recognize that society's expectations of agriculture are changing to include a wide range of health and environmental services such as producing food with nutraceuticals, protecting biodiversity, mitigating climate change and providing alternative energy sources.

## Admission Requirements

As a part of the application package, applicants are required to secure a faculty advisor to supervise their program.

- The MSc requires a Baccalaureate degree in an honours plant science/ biology program, or equivalent, from a recognized university or college with at least a B average over the last two years of full-time study (or equivalent).
- The PhD requires a MSc degree by thesis in a field appropriate to the proposed area of specialization with a minimum B average.



We offer an interdisciplinary research environment in modern, well-equipped laboratories and research stations to provide excellence in graduate education and training.

## Research Fields

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

## Our Faculty

Faculty have modern labs with state-of-the-art equipment and access to controlled environment growth facilities and numerous field sites distributed over Ontario. Faculty are located on four campuses affording a variety of opportunities and experiences for our students. Our faculty are internationally recognized as leaders in their scholarly activities. Support for research is obtained from a variety of sources including federal, provincial, international, industrial and grower sponsors.

## Application Deadline:

Ongoing

Entry: Fall, Winter, Spring

## ARE YOU INTERESTED IN:

- Increasing plant production efficiency
- Developing new varieties
- Understanding plant growth and development
- Weed control
- Plant-environment interactions
- Discovering new environmentally friendly industrial materials

## CAREER OPPORTUNITIES:

- Crop Consultant
- Breeder/Geneticist
- Plant Physiologist
- R&D Bio-Based Plastics

## CONTACT INFORMATION

### Graduate Program Coordinator:

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### Graduate Program Assistant:

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**Departmental Graduate Faculty with Research Areas****Gale G. Bozzo**

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*Postharvest physiology & secondary metabolism*

**John A. Cline**

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*Fruit tree physiology & management*

**Hugh J. Earl**

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*Oilseed physiology & agronomy*

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*Soybean breeding & genetics*

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*Dry bean agronomy & pest management*

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*Photosynthesis, carbon partitioning and productivity, manned space program*

**David C. Hooker**

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*Field crop agronomy*

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*Plant propagation and in vitro conservation*

**Katerina S. Jordan**

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*Turfgrass science; nematology*

**Melanie Kalischuk**

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*Genomics, pathology, specialty crop improvement*

**Elizabeth A. Lee**

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*Corn breeding & genetics*

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*Bioinformatics, genetics of stress tolerance*

**Eric M. Lyons**

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*Stress physiology; root biology of turfgrass species*

**Mary Ruth McDonald**

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*Diseases & integrated crop management of vegetables*

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*Physiology & genetics of vegetable crops*

**Manjusri Misra**

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*Bio-based new materials & green nanotechnology*

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*Bioeconomy related to biobased materials, biofuels & biorefinery*

**Joshua Nasielski**

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*Field crop agronomy and crop physiology, eastern and northern Ontario*

**K. Peter Pauls**

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*Tissue culture; molecular biology techniques to crop improvement*

**Manish N. Raizada**

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*Novel proteomics, genome & protein engineering technologies*

**Istvan Rajcan**

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*Soybean breeding & genetics; seed composition, bioproducts, yield stability, G x E, exotic germplasm*

**Darren E. Robinson**

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*Weed management & horticultural crops*

**Praveen K. Saxena**

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*Plant morphogenesis; conservation; medicinal plant biology*

**Kimberley Schneider**

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*Forage and service crops, nutrient cycling, sustainable agriculture*

**Peter H. Sikkema**

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*Weed management, field crops*

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*Tree fruit genetics, breeding & biotechnology & biotechnology*

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*Precision Agriculture, cropping systems, remote sensing & geographic information systems*

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*Physiology, ecology & molecular biology of herbicide resistance*

**Cheryl Trueman**

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*Vegetable disease management*

**Rene C. Van Acker**

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*Weed biology & ecology; biosafety & novel trait confinement; agronomy*

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*Plant genetics; plant breeding; tissue culture; molecular genetics*