Food Science: MSc, PhD

The Department of Food Science provides state of the art knowledge translation focused on developing sustainable, safe and innovative foods aimed at improving human health. Research done in Food Science focuses on interdisciplinary studies spanning chemistry, biology, microbiology, natural product chemistry, nanoscience, physics and nutritional science.

https://www.uoguelph.ca/foodscience/

Program

We offer a Master's program and a Doctoral program. Master's students complete a thesis based Master of Science, MSc over the period of approximately six semesters. The PhD program requires the successful completion of a qualifying exam and the completion and defense of a research-based thesis.

Research Fields

- Food Microbiology
- Food Chemistry/Physics
- Food Processing

Admission Requirements

Applicants require an Honours BSc in Food Science, Chemistry, Biology, Microbiology, Physics, or other related degree. A minimum average of 73% for the last four semesters completed prior to entry is required.

Applicants are strongly encouraged to find an advisor before applying.

Application Deadline:
Ongoing

Entry: Fall, Winter, Spring

Food science at the University of Guelph currently ranks 4th globally according to Center for World University Rankings (CWUR), publisher of the largest academic ranking of universities worldwide.

Faculty and Facilities

Currently 16 faculty train more than 100 graduate students in the department. Our facilities include individual laboratories, teaching laboratories, a core laboratory (focuses on analytical chromatography), a state-of the art dairy processing plant, an experimental kitchen, a newly renovated food processing facility (GFIC) and a level II biosafety facility. The department houses extensive research equipment including: one of three TIM-1 simulated digestive tracks currently housed in Canada, microscopes (atomic force, confocal, polarized, fluorescence), rheometers (controlled strain and stress), spectrophotometers (un/vis, fluorescence, FT-IR, CD), calorimeters (differential, micro cal), PCR detection systems, X-ray diffractometer, etc.

ARE YOU INTERESTED IN:

- Food Safety?
- Sensory Science?
- Biochemistry and Microbiology?
- Engineering?
- Bacteriology?
- Organic Chemistry?
- Food Chemistry?

CAREER OPPORTUNITIES:

- Food Safety
- Product Development
- Quality Assurance
- Research and Development

CONTACT INFORMATION

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Academic Programs Assistant:
Tricia Townsend
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Department of Food Science Faculty

Shai Barbut: Shai's research focuses on factors affecting meat quality, protein gelation with an emphasis on structure function relationships, rheological properties and food safety.

Benjamin Bohrer: Ben and his research group focus on aspects related to meat science and muscle biology. All phases of the meat science spectrum (live animal, fresh meat, and processed meat) are considered when asking applied research questions.

Lisa Duizer: Lisa's research investigates food preference of older adults and focuses on dysphagia and malnutrition in this subset of the population

Jeff Farber: Jeff joins us after a long career at Health Canada where his final position was the Director of microbial food safety. His research focuses on Listeria research and policy development.

Douglas Goff: Doug's research interests are focused in a few different areas. He is best known for his ice cream work, where he has maintained a research interest for more than 30 years, having looked at ingredients, structure, manufacturing and quality issues. Most recently, his long-standing interest in polysaccharide structure and functionality, particularly their effect on ice recrystallization, combined with his interests in nutrition has led him to look more closely at polysaccharides as dietary fibre.

Arthur Hill: Art's major research theme is cheesemaking properties of milk as related to processing treatments and interactions among milk proteins and nutritionally functional ingredients

Iris Joye: Iris' research interests are predominantly directed towards the role of cereal proteins in cereal processing and how their functionality can be manipulated by flour pre-processing, chemical and enzymatic additives.

Gisèle LaPointe: Gisèle's research aims towards understanding how food components modulate the metabolic activities of microbiota in food and human microbial ecosystems. Her goal is to improve the quality and functionality of food, with a special focus on milk and dairy products.

Loong-Tak Lim: Loong-Tak's research focuses on research topics related to food packaging, electrospinning/electrospraying, encapsulation, biopolymer film/coating, and coffee technology.

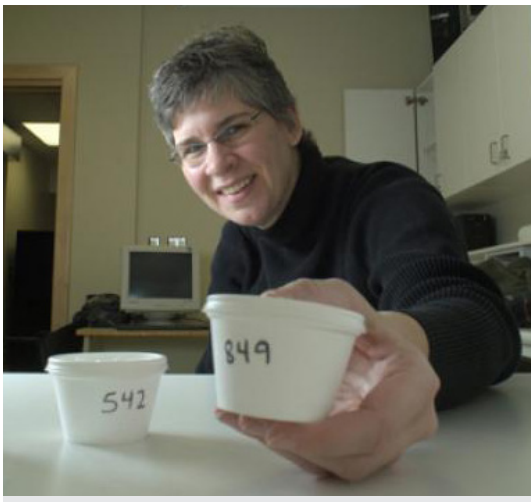
Alejandro Marangoni: Alex's work concentrates on the physical properties of foods, particularly fat crystallization and structure.

Massimo Marcone: Massimo's research centers around the area of Food Analysis, which often permits him to work very closely with the industry and the media alike at looking at the composition of various commercial products for comparative purposes. He has also been a very sought over person by the media in trying to determine between fact or fiction when it comes to a plethora of Food Delicacies and Exotic Foods.

Don Mercer: Don's research focuses on dehydration and drying of fruits and vegetables.

Yoshinori Mine: Yoshi's main research topic is gut health and immunity, and identifying bioactive food factors that promote gut health.

Michael Rogers: Michael's research examines sugar- and lipid-derived molecules that can be modified and analyzed for molecular nuances that drive their self-assembly into complex gels. He also researches the impacts of food processing on the chemistry of food materials and, ultimately, on the body's interaction with and absorption of nutrients from them.



Lisa Duizer, *Associate Professor*

Lisa Duizer has been a faculty member in the Department of Food Science since 2009. Lisa studies sensory properties of food with a focus on foods designed for older adults.

Paul Spagnuolo: Paul's research examines both the fundamental and translational impact of nutraceuticals. Primarily focusing on understanding the basic cell and molecular mechanisms by which nutraceuticals impart their anti -cancer activity his research also looks to characterize their pre-clinical efficacy.

Keith Warriner: Keith's research revolves around food safety and food microbiology, allowing him to work closely with industry and apply his research findings in a practical way. A recent example of applied research conducted by Keith and his team involved developing and implementing decontamination solutions for candy apples, whose market had sank after a listeria outbreak in 2014.

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