

# ONE HEALTH

The Collaborative Specialization in One Health 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. Doctoral and Master's (thesis or course work and MRP) students wishing to undertake graduate studies with emphasis on One Health will be admitted by a participating department and will register in both the participating department and in the collaborative specialization.

The participating academic programs are Animal Biosciences (MSc, PhD), Biomedical Sciences (MSc, PhD), Computational Sciences (PhD), Computer Science (MSc, PhD), Engineering (MEng, MSc, PhD), Environmental Sciences (MES, MSc, PhD), Food Science (MSc, PhD), Geography (MA, MSc, PhD), History (MA, PhD), Human Health and Nutritional Sciences (MSc, PhD), Integrative Biology (MSc, PhD), Mathematics and Statistics (MSc, PhD), Molecular and Cellular Biology (MSc, PhD), Pathobiology (MSc, PhD), Political Science (MA, PhD), Population Medicine (MSc, PhD), Philosophy (MA, PhD), Public Issues Anthropology (MA), and Rural Development and Planning (MSc).

## Administrative Staff

### Graduate Program Coordinator

Katie Clow (2531 Stewart Building, Ext. 53944)  
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## Graduate Faculty

*This list may include Regular Graduate Faculty, Associated Graduate Faculty and/or Graduate Faculty from other universities.*

### Tara H. Abraham

B.Sc. McMaster, MA, PhD Toronto - Associate Professor  
Graduate Faculty

### Madhur Anand

B.Sc., PhD Western Ontario - Professor  
Graduate Faculty

### Olaf Berke

Dipl. Statistics, PhD Dortmund Germany - Associate Professor  
Graduate Faculty

### Theresa M. Bernardo

Assoc. of Music, DVM Guelph, M.Sc. Prince Edward Island - Assistant Professor  
Graduate Faculty

### Ryan C. Briggs

BSS Ottawa, PhD American - Associate Professor  
Graduate Faculty

### David A. Calvert

BA, M.Sc. Guelph, PhD Waterloo - Associate Professor  
Graduate Faculty

### Catherine Carstairs

AB Harvard, Dip Ed McGill, MA, PhD Toronto - Professor  
Graduate Faculty

### Katie M. Clow

B.Sc., DVM, PhD Guelph - Assistant Professor

Graduate Faculty

### Rozita Dara

B.Sc. Shahid Teheshti, M.Sc. Guelph, PhD Waterloo - Associate Professor  
Graduate Faculty

### Kari Dunfield

B.Sc. Calgary, M.Sc., PhD Saskatchewan - Professor  
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### Elizabeth Finnis

BA McMaster, MA Western, PhD McMaster - Associate Professor  
Graduate Faculty

### Robert M. Friendship

DVM, M.Sc. Guelph, Dip ABVP - Professor  
Graduate Faculty

### Karine Gagné

BA Concordia, M.Sc., PhD Montreal - Assistant Professor  
Graduate Faculty

### Dan Gillis

B.Sc., M.Sc., PhD Guelph - Associate Professor  
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### Maya Goldenberg

BA Toronto, MA McGill, PhD Michigan State - Associate Professor  
Graduate Faculty

### Lawrence Goodridge

B.Sc., M.Sc., PhD Guelph - Professor  
Graduate Faculty

### Amy L. Greer

B.Sc., Mount Allison, M.Sc., Trent, PhD Arizona State - Associate Professor  
Graduate Faculty

### T. Ryan Gregory

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### Andrew Hamilton-Wright

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### Claire Jardine

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Graduate Faculty

### Candace Johnson

BA Toronto, MA, PhD Dalhousie - Professor  
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### Craig A. Johnson

BA Queen's, MA Toronto, PhD School of Economics London - Professor  
Graduate Faculty

### Iris Joye

B.Sc., M.Sc. Leuven, PhD Leuven/Ghent (Belgium) - Associate Professor

Graduate Faculty

**Niel A. Karrow**

B.Sc. Guelph, M.Sc., PhD Waterloo - Professor  
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**Satsuki Kawano**

BA Keio, MA Minnesota, PhD Pittsburgh - Professor  
Graduate Faculty

**Edward Koning**

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Graduate Faculty

**Gisele LaPointe**

B.Sc., PEI, M.Sc., PhD Quebec - Professor  
Graduate Faculty

**Leah Levac**

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**Phil Loring**

BA Florida, MA, PhD Alaska - Associate Professor  
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**Brittany Luby**

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**Stuart G. McCook**

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**Thomas (Tad) McIlwraith**

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**Silvia Sarapura**

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**John Z. Srbely**

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**Leonardo Susta**

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**Eran Ukwatta**

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**Laura Van Eerd**

M.Sc., PhD Guelph - Professor  
Graduate Faculty

**Keith Warriner**

B.Sc. Nottingham, PhD Aberystwyth - Professor  
Graduate Faculty

**Jeffrey Wichtel**

B.V.Sc., PhD Massey - Professor and Dean, Ontario Veterinary College  
Graduate Faculty

**Geoffrey A. Wood**

DVM Guelph, PhD Toronto, D.V.Sc. Guelph - Associate Professor  
Graduate Faculty

## Admission Requirements

Master's and doctoral students in the Collaborative Specialization in One Health must meet the admission requirements of the participating department in which they are enrolled. The application process has two stages. First, prospective students will apply to their primary program of interest, identifying interest in the collaborative specialization as a focus. If the student is admitted to the primary program, the second stage is then admission to the collaborative specialization. Applicants will be required to submit a letter of interest (maximum 500 words) briefly outlining their interest in One Health and explaining how their area of research will align with One Health and intersect with all three pillars (animals, humans, and the environment).

All applications to participate in the Collaborative Specialization in One Health will be reviewed by the specialization's Graduate Program Coordinator and a committee of 3-5 faculty from different colleges.

## Learning Outcomes

By the end of their program of study, graduates of the Collaborative Specialization in One Health should be able to:

- Holistic Understanding of Health**
  - Formulate a holistic definition of health in the context of their work.
  - Analyze the interconnections between animal, human, and environmental health.
  - Apply and assess health in different settings, and work in different levels of health from local to global.
- Systems Thinking**
  - Illustrate complex health issues as systems by identifying the components, their functions, and the interconnections between them.
- Problem Solving and Critical Thinking**

- a. Analyze problems in a holistic manner, incorporating various perspectives, disciplinary and non-traditional knowledges.
  - b. Devise potential solutions that acknowledge the interconnections of human, animal and environmental health.
  - c. Identify how behaviour changes and what makes for successful intervention.
4. **Resilience and Health**
- a. Evaluate system resilience and sustainability by selecting, combining, and applying tools and methods from different disciplines.
5. **Leadership and Collaboration**
- a. Apply strong networking and interpersonal skills in professional settings.
  - b. Identify relevant perspectives involved in each system and assemble teams that bring together the necessary perspectives and expertise.
  - c. Generate action plans that leverage the strengths of the team and promote efficiency.
6. **Informatics**
- a. Synthesize and analyze data and literature from a variety of sources to make informed, evidence-based decisions, including policy assessment and recommendations.
  - b. Explain complex One Health problems using several modes of communication and knowledge dissemination tools.
7. **Research**
- a. Apply contemporary research methods, skills and techniques to conduct independent inquiry within One Health.
  - b. Appraise current One Health research using theory and peer-reviewed standards.
  - c. Expand current knowledge through their research that contributes to One Health efforts.
8. **Professional and Ethical Behaviour**
- a. Create opportunities for open communication and active listening.
  - b. Demonstrate ethical decision-making when evaluating proposed One Health actions.
  - c. Demonstrate strong time management and organizational skills.
9. **Breadth and Depth of Understanding**
- a. Demonstrate a depth of knowledge of their primary area of specialization and recognize how tools and methods from their discipline contributes to One Health
  - b. Describe the applications of and methodologies for One Health in variety of contexts

## Program Requirements

### Master's Requirements

Master's students in the Collaborative Specialization in One Health must complete:

Code	Title	Credits
ONEH*6000	One Health Approaches to Research	0.50
ONEH*6100	Master's Seminar in One Health	0.50

An acceptable MRP or thesis that applies a One Health approach.

For thesis-based master's students, at least one member of the student's advisory committee must be a core graduate faculty member of the Collaborative Specialization in One Health. Requirements of this

collaborative specialization may also serve as elective requirements in the student's home program.

### Doctoral Requirements

Doctoral students in the Collaborative Specialization in One Health must complete:

Code	Title	Credits
ONEH*6000	One Health Approaches to Research	0.50
ONEH*6200	Doctoral Seminar in One Health	0.50

Successfully defend a thesis that applies a One Health approach.

At least one member of the student's advisory committee must be a core graduate faculty member of the Collaborative Specialization in One Health. Students that previously completed ONEH\*6000 One Health Approaches to Research as part of the master's collaborative specialization will be exempt from retaking it as part of the doctoral collaborative specialization; however, they will still be required to complete the final Research Proposal and Presentation assignment. Requirements of this collaborative specialization may also serve as elective requirements in the student's home program.

## Courses

### ONEH\*6000 One Health Approaches to Research Winter Only [0.50]

A multidisciplinary course for graduate students that provides in-depth knowledge on the One Health approach, exploring complex issues at the interface of human, animal, and environmental health. Active learning lessons will foster strong skill development for One Health research in collaboration, systems thinking, transdisciplinarity, critical thinking, problem solving, leadership, and communication.

**Restriction(s):** Restricted to One Health collaborative specialization students.

**Department(s):** Department of Population Medicine

**Location(s):** Guelph

### ONEH\*6100 Master's Seminar in One Health Fall Only [0.50]

This course offers a university-wide multidisciplinary forum for discussion of One Health. Master's students will discover One Health through different disciplinary lenses, facilitate and actively engage in academic discussion about One Health, and practice leadership and networking skills necessary for success as a One Health practitioner.

**Prerequisite(s):** ONEH\*6000

**Restriction(s):** Restricted to Restricted to One Health collaborative specialization masters students.

**Department(s):** Department of Population Medicine

**Location(s):** Guelph

### ONEH\*6200 Doctoral Seminar in One Health Fall Only [0.50]

This course offers a university-wide multidisciplinary forum for discussion of One Health. Doctoral students will discover One Health through different disciplinary lenses, facilitate and actively engage in academic discussion about One Health, and practice leadership and networking skills necessary for success as a One Health practitioner.

**Prerequisite(s):** ONEH\*6000

**Restriction(s):** Restricted to One Health collaborative specialization PhD students.

**Department(s):** Department of Population Medicine

**Location(s):** Guelph