Biology 4999E
Potential Supervisors 2025-2026

Biology Department Website: http://www.uwo.ca/biology/
Check web sites for detailed information of research area
STUDENTS MUST BRING A COPY OF THEIR UNOFFICIAL TRAN SCRIPT TO INTERVIEWS

Projects in Biology cover a wide range of options including Biochemistry, Development, Ecology, Evolution, Genetics, Molecular Biology, Physiology. Studies are performed with huge range of organisms from animals to plants, bacteria and fungi.

The potential supervisors are not restricted to this informal list. Please also check the Biology faculty webpage for options.

Main Campus:

Dr. Brian Branfireun, 226-977-0226, bbranfir@uwo.ca, Collip 111
Research Areas: Ecohydrology, biogeochemistry and wetland ecosystem science

Dr. Thomas DeFalco, Ext. 81475, tdefalc@uwo.ca, NCB404
Research Area: Decoding the molecular signalling downstream of cell surface receptors in plants.

Dr. Martin Duennwald, Ext. 86874, martin.duennwald@schulich.uwo.ca, MSB4 1014
Research Area: Using yeast models to study neurodegenerative diseases, cellular protein quality control, protein-protein interactions and protein folding.

Dr. Tim Hain, thain@uwo.ca, NCB 301F
Research area: Behavioural and community ecology of fish and birds

Dr. Hugh Henry Ext. 81548, hhenry4@uwo.ca, BGS3021
Research area: Plant, soil and ecosystem ecology, with a focus on winter biology and global change.

Dr Kathleen A. Hill, Ext 81337, khill22@uwo.ca, WSC333
Research Area: Genetics, Mutagenesis, Mutational Mechanisms, Mutational Signatures and Landscapes
Projects: New Mutations in Mouse Families: inherited and acquired mutations identified and characterized through whole genome sequencing with bioinformatics software used for variant detection and statistical software used for analyzing patterns in mutation spacing.

Dr. Jim Karagiannis, Ext. 80975, jkaragia@uwo.ca, BGS 3080
Research Area: Molecular genetic analysis of the regulatory networks governing cytokinesis

Dr. Susanne Kohalmi, Ext. 86485, skohalmi@uwo.ca, WSC 319
Research area: Gene families and their regulation using ADTs in *Arabidopsis thaliana* as a model system.

Dr. Paul Mensink, Ext. 87563, paulmensink@uwo.ca, NCB 208
Research Area: Marine ecology
Projects will focus on analyzing long-term shark abundance datasets. Students will explore species relationships across life stages and how abiotic factors like temperature affect populations. Responsibilities include data quality control, management, visualization, and analysis, primarily using R.
Research Area: Immersive technology in education
Projects will focus on the use of augmented reality (AR) and virtual (VR) in biology education. Students will develop ethics applications, design and implement experiments, and analyze outcomes. The aim is to explore how immersive technology enhances learning and engagement.

Dr. Natasha MacBean, Ext. 85008, nmacbean@uwo.ca, SSC 2412
Project Proposal: Understanding and modeling dryland ecosystem processes. Depending on experience and interests, the project will involve computational analysis of data and model outputs to better understand dryland carbon cycling and sensitivity to climate variables.

Dr. Natasha Mhatre, Ext. 84505, nmhatre@uwo.ca, BGS 3023/3027
Research Area: We study how different animals, particularly spiders and crickets, communicate using sound and vibration. Our work is interdisciplinary, combining biology, physics and includes experimental and simulation based approaches.
Further details are at https://www.natashamhatre.net/

Dr. Amanda Moehring, Ext. 55597, amoehrin@uwo.ca, WSC307
Research area: Behavioural genetics and neuroscience.

Dr. Yolanda Morbey, Ext. 80116, ymorbey@uwo.ca, BGS 2074
Research Area: Movement ecology of birds. Projects will involve data analysis or modelling, and are geared towards students with an interest in natural history, ecology and evolution, quantitative methods, and programming in R. Preference will be given to those who are pursuing a module in Biodiversity & Conservation, Animal Behaviour, or Biology (with an emphasis on ecology).

Dr. Bryan Neff, 519-850-2532, bneff@uwo.ca, Collip Bldg. CB 204
Research area: Molecular and behavioural ecology of fishes

Dr. Michael Pyne, Ext.mpyne3@uwo.ca, 85802, BGS 2080
Research Area: Projects will be related to engineering brewer's yeast for the discovery and synthesis of plant natural product pharmaceuticals.

Dr. Ben Rubin, Ext. 87475, brubin2@uwo.ca, BGS 3072
Research Area: Forest Ecology. Field-based projects are available to study the ecology of forest canopy gaps. Data analysis projects are available to study patterns of tree mortality.

Dr. Vera Tai, Ext. 86209, vtai4@uwo.ca, BGS 2028
Research Area: Environmental microbiology and bioinformatics

Dr. Graeme Taylor, Ext. 81467, gtaylor8@uwo.ca, BGS 3072
Research Area: Evolution and ecology of animal design (biomechanics)

Dr. Alexander Timoshenko, Ext. 88900, atimoshe@uwo.ca, BGS-3032
Research Area: Molecular cell biology and biomedical application of galectins.

Dr. Raymond Thomas, Ext.86470, rthoma2@uwo.ca, MSA 3203
Research Area: Functional foods production, sensory perception, development, safety and preservation; use of nanotechnology to enhance plant performance or remediation in Boreal Ecosystem; lipid metabolism in environmental stress biology; Influences of gut microbiome on brain lipid metabolism and brain health; chemometrics and lipid modeling/lipid bioinformatics/foodomics/food metabolomics; Increase yield, nutritional and value-added production in control systems agriculture and alternative forage production systems; sustainable functional food production in hydroponics (sprouted fodder, herbs and vegetable production)

Dr. R. Gregory Thorn, Ext. 88647, rgthorn@uwo.ca, BGS 3047
Research Area: Various projects in fungal systematics and ecology

Dr. Liana Zanette, Ext. 88317, lzanette@uwo.ca, CB 207
Research Area: Predator-prey interactions and the 'Ecology of Fear' in wildlife: from birds to elephants. For more information on the research we do in my lab, please see my webpage: lianazanette.com

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Agriculture and Agri-Food Canada Potential Supervisors [1391 Sandford St., London, ON N5V 4T3]

Dr. Sangeeta Dhaubhadel, 519-953-6616, Sangeeta.Dhaubhadel@ agr.gc.ca
Research Area: Phenylpropanoids in legumes. Phenylpropanoid pathway produces a plethora of plant specialized metabolites with human health benefits. They play important roles as chemical signals in plant-environment interaction such as plant defense against biotic and abiotic stresses. We study the genes and their regulators (such as transcription factors) involved in the biosynthesis of a subset of these compounds such as phytoalexin isoflavonoids in soybean, field pea and lentil. Knowledge of the plant chemical signals against pathogens will allow us to develop disease management strategies and tailor their production to aid human health, nutrition and crop yield.
Prospective 4999 students can look forward to working with direct mentorship of a PhD candidate. During the course of the project the student will be exposed to a broad range of molecular biology, bioinformatics and genetics and analytical chemistry techniques and equipment. My research lab is situated at the Agriculture and Agri-Food Canada Research Station, which houses state of the art facilities and is located just 10 minutes from the University of Western Ontario campus.

Dr. Abdelali Hannoufa, 519-953-6621, Abdelali.Hannoufa@ agr.gc.ca
Research Area: Molecular physiology of abiotic stress response in plants

Dr. Frédéric Marsolais, 226-234-3450, Frederic.Marsolais@agr.gc.ca
Research Area: Protein chemistry of pulse crops. We recently identified a gene expressed in the seed coat of common bean involved in the regulation of seed water uptake. This gene encodes an enzyme, pectin acetylesterase, which hydrolyzes acetyl groups in the carbohydrate polymer, pectin. Removal of acetyl groups favors interactions with calcium ions, making the seed coat impermeable. The gene also affects physical dormancy resulting in delayed germination of older seed. Evidence indicates that the gene was selected for during the domestication of the crop. A prospective 4999 student will investigate synteny and functional conservation of this gene in related legume crops. While the initial stages of the project will involve bioinformatics, there may be opportunities to use molecular and biochemical techniques, including gene cloning, DNA sequencing, Western blotting and quantification of pectin acetylation in seed coat of different species.

Dr. Rima Menassa, 519-953-6636, rima.menassa@ agr.gc.ca
Research Area: Producing virus-like particles in plants as vaccine candidates for animal diseases

Dr. Ian Scott, 226-378-1961, ian.scott2@agr.gc.ca
Research Area: projects would be in the area of plant-insect interactions, biopesticides or insecticide resistance.

Dr. Aiming Wang, 519 200-3786 aiming.wang@agr.gc.ca or awang45@uwo.ca
Research Area: Virus-induced immunity response and counteracting mechanism in plants; Molecular virus-plant interactions; Fruit tree biotechnology