Human Health and Nutritional Sciences

Amanda Wright	ajwright@uoguelph.ca	My expertise lies in interdisciplinary food-nutrition research and I have particular interest in topics related to dietary lipids and health. For example, my students and I apply in vitro digestion methods and human clinical trials to define the contributions of triacylglycerol physical properties to postprandial metabolism. In my role as Director of the Human Nutraceutical Research Unit, I facilitate human studies to support evidence-based foods and natural health products. This complements my teaching within the Nutritional & Nutraceutical Sciences degree.
Lindsay Robsinson	lrobinso@uoguelph.ca	Lindsay Robinson is an Associate Professor in the Department of Human Health and Nutritional Sciences at the University of Guelph. Her academic training includes a B.Sc. (Honours) in Biology from Acadia University and a Ph.D. in Nutrition and Metabolism from the University of Alberta. Following this, she held a Postdoctoral Fellowship at the University of Guelph and was a visiting Postdoctoral Fellow at the Copenhagen Muscle Research Centre in Denmark. Dr. Robinson teaches undergraduate and graduate courses in the biological concepts of health, nutritional science and exercise physiology/metabolism. Her research program is focused on the modulation and function of inflammatory proteins secreted from adipose tissue and/or skeletal muscle with an emphasis on the mechanisms by which bioactive nutrients, such as omega-3 fatty acids, and/or exercise modulate immune and inflammatory processes in obesity. Dr. Robinson has trained many highly qualified personnel, including undergraduate and graduate students, and postdoctoral fellows
David Wright	dcwright@uoguelph.ca	Dr. Wright's laboratory is interested in examining how exercise, diet and pharmaceutical interventions impact the functioning and metabolism of adipose tissue (fat) and liver and in turn how this relates to changes in whole body carbohydrate and lipid homeostasis. A relatively new area of interest is examining how exercise can be used to protect against the metabolic side effects of antipsychotic medications.
Coral Murrant	cmurrant@uoguelph.ca	Proper blood flow to tissues in critical to tissue health. My main research focus centres around how blood flow delivery to tissues is controlled, especially when the demands of the tissues change. We currently use skeletal muscle as a model and microscopy (and more recently immunohistochemistry) to investigate how cells of the tissue (contracting skeletal muscle cells) can communicate with blood vessels in order to ensure adequate blood flow to the working skeletal muscle cells during contraction. This type of communication requires that active skeletal muscle cells communicate their need for blood flow to the cells of the vasculature, endothelial cells and vascular smooth muscle cells, and that these cells alter their function in order to ensure the proper blood flow delivery. I am interested in this intercellular communication.

Integrative Biology

Christine Caruso	carusoc@uoguelph.ca	Christina (Chris) Caruso is an Associate Professor in the Department of Integrative Biology. She is an ecologist and evolutionary biologist who is currently studying how plants evolve in response to global declines in insect pollinators. For more information on her research and lab group see www.christinamariecaruso.com.
Todd Gillis	tgillis@uoguelph.ca	Work in my lab is focused on the vertebrate heart and how it is affected by physiological and environmental stressors. This work involves a number of different species and stressors. These include Pacific salmon and crude oil, Alligators/turtles/hagfish with low oxygen, and trout with temperature change. We use a variety of molecular, proteomic, and physiological approaches to characterize how cardiac function is affected and to determine how these changes translate to whole animal responses. This work is providing fundamental insight into the capacity of the heart to respond to stressors and of the impact of climate change and environmental pollution on the health and survival of wild animal populations.
Elizabeth Manderville	emandevi@uoguelph.ca	I am an assistant professor of computational biology in the Department of Integrative Biology at the University of Guelph. Work in my lab focuses on quantifying and explaining variation in evolutionary processes using high resolution genomic data. Most of my work focuses on freshwater fish facing anthropogenic disturbances, and I often collaborate with conservation and management agencies. I enjoy learning and teaching new computational approaches and programming languages, and I am interested in effective visualization of multidimensional scientific data.

Kevin McCann	ksmccann@uoguelph.ca	Prof McCann is an aquatic ecologist that studies the role of biological structure in mediating the sustainability and functioning of whole ecosystems. His research has played a leading role in understanding how species interaction strengths mediate the stable functioning of ecosystems. His lab is currently focusing his attention on sustainability under global change, working in global change areas including fisheries, agro-ecosystems, the human microbiome, and global food production. see mccannlab.ca
Shoshanah Jacobs	sjacob04@uoguelph.ca	My interests cross disciplinary lines as I try to find solutions to problems that affect the natural world, including the people in it. Some times my work takes me to seabird colonies where climate change is affecting the reproduction of birds. Other times, I'm working in communities, both in Guelph, or elsewhere to help figure out how we can live in a more sustainable way. I enjoy blurring the lines across disciplines to figure out what we can learn and how we can bring that knowlege together to make positive change.
Ryan Norris	rnorris@uoguelph.ca	Ryan Norris is an Associate Professor in the Department of Integrative Biology and the Weston Family Senior Scientist for the Nature Conservancy of Canada. His research focuses on the ecology and conservation of threatened species, with an emphasis on birds and butterflies. Research in his lab takes pace in a variety of ecosystems across Canada and internationally.
Amy Newman	newman01@uoguelph.ca	I am integrative ecophysiologist and study the long-term effects of environmental stress on development, behaviour, physiology and fitness of wildlife. I am especially interested in how environmental change and landscape modification can impact stress responses in animals ranging from birds to butterflies to small mammals, and how these insights may apply to understanding stress and human health.
Georgia Mason	gmason@uoguelph.ca	The Mason lab uses behaviour and physiology to investigate animal welfare. The research questions we are interested in include: How can we use science to assess how animals feel? What does it mean to live a good life? And how can housing conditions for lab, farm and zoo animals be improved? (See https://masonabwlab.wordpress.com/

Molecular and Cellular Biology

Melissa Perreault	perreaum@uoguelph.ca	Dr. Perreault is an Assistant Professor in the Department of Molecular and Cellular Biology. She is a neuroscientist and her research focuses on sex differences in neuropsychiatric disorders using animal model systems of depression, schizophrenia, and autism. One of her important research goals is to identify sex-dependent brain wave patterns that contribute to disorder vulnerability and treatment responses. Dr. Perreault is a citizen of the Métis Nation of Ontario, and is heavily involved in Indigenous and equity, diversit,y and inclusion initiatives.
Annette Nassuth	anassuth@uoguelph.ca	My lab investigates molecular changes that occur in plants when they are exposed to low temperatures, which increases their tolerance of freezing temperatures. Our study object is grapevines. The goal is to know what to select for when searching for most the frost tolerant wine grapes. However, our research is expected to be also applicable to other plants since they seem to have a very similar process.
Jennifer Geddes-McAlister	jgeddesm@uoguelph.ca	Dr. Geddes-McAlister's research group explores the intricate relationship between hosts and pathogens during infection using state-of-the-art mass spectrometry-based proteomics. We aim to learn how the host protects itself from disease and how the pathogen circumvents such a defense response to support a successful infection. With this information, we uncover new opportunities to interfere with the interactions between a host and pathogen, known as anti-virulence strategies, which clear the pathogen, while limiting the evolution of resistance to the therapy.
Shaun Sanders	ssande03@uoguelph.ca	Dr. Sanders completed her BSc in Genetics and her PhD in Neuroscience at the University of British Columbia. She then went on to complete a postdoctoral fellowship at Temple University in Philadelphia. The Sanders lab is a molecular neuroscience lab interested in how neurons use the protein-lipid modification palmitoylation to target proteins to specific subcellular locations in neurons and to define how palmitoylation-dependent targeting contributes to physiological neuronal function and neuropathological conditions. We use cutting edge genetic, biochemical, and cell biological approaches to answer these questions, including CRISPR-mediated gene knockout and mutation, shRNA-mediated knockdown and rescue, specialized palmitoylation assays, and live and fixed confocal microscopy in neurons grown in conventional culture and in microfluidic devices.

Baozhong Meng	bmeng@uoguelph.ca	Research in my lab focuses on several areas of plant virology, specifically several important pathogenic viruses that affect the grape and wine industry. These include molecular biology, cell biology, viral replication, virus-host interactions between viruses and their host as well as molecular diagnostics for viruses. My research team is composed of several graduate students at both the PhD and MSc levels, a research associate, and several undergraduate research project students. We cherish a positive and inclusive environment to ensure everyone will have the opportunity to learn, grow and succeed.
John Dawson	jdawso01@uoguelph.ca	My name is John Dawson. I'm a Professor in the Department of Molecular and Cellular Biology studying heart disease and the proteins involved in movement in our muscles. I'm also the Director of the College of Biological Science Office of Educational Scholarship and Practice (COESP), where I support improving teaching and learning in at the university. I have mentored lots of students in many aspects of life in general and value helping and being encouraging as much as I can. I'd love to be a mentor for you!
Steffen Graether	graether@uoguelph.ca	When I was learning biochemistry as an undergraduate, I was fascinated by the idea that proteins are able to specifically bind their molecular targets (ligands) despite the presence of similar molecules and in a cell completely crowded with other molecules. Since starting my PhD, I have been trying to understand how some proteins are able to protect cold-blooded organisms from stress and damage caused by low temperatures and freezing. Recently, we have been focussing on figuring out how plant cold and drought proteins, known as dehydrins, are able to function despite their lack of a stable 3D structure. We use techniques in biochemistry, biophysics and bioinformatics to study their function, structure, and sequence, with a long-term goal of helping to develop more resistant plants.
Rebecca Shapiro	shapiror@uoguelph.ca	The Shapiro lab is interested in the microbiology of fungal pathogens. We develop and use cutting-edge functional genomic tools to probe the biology, pathogenesis, and mechanisms of antimicrobial drug resistance in these important pathogens. We also focus on developing new CRISPR-based biotechnology tools that allow us to targetedly mutate or regulate fungal genomes on a large scale to improve our understanding of these organisms.
Cezar Khursigara	ckhursig@uoguelph.ca	The research in our laboratory focuses on elucidating the structure and function of protein complexes involved in complex biological processes. We are particularly interested in the macromolecular assemblies that govern bacterial cell division, cell-to-cell interaction, biofilm formation, motility and chemotaxis. Moreover, with the emergence of a growing number of multi-drug resistant strains of bacteria there is a pressing need to identify new drug targets. Accordingly, these essential bacterial processes provide a number of exciting candidates. My research group is taking a multidisciplinary approach to answer fundamental questions related to these essential cellular processes. By combining cryo-electron microscopy and tomography with biochemical, biophysical, molecular and cellular techniques, our goal is to identify potential therapeutics that can target a broad spectrum of disease-causing bacteria. We also seek to develop novel imaging techniques, including correlative methods using fluorescent and cryo-electron microscopy. We hope that the imaging methods we develop in this research program will transcend bacterial studies and significantly impact applications in diverse biological fields, thus leading to advances in structural biology, nanotechnology, ecology and medicine, among others.
Janet Wood	jwood@uoguelph.ca	Janet Wood taught biochemistry and microbiology while leading a Guelph research lab from 1977 through 2020. Her lab used the tools of microbiology, genetics, biochemistry, biophysics and mathematics to learn how living cells (particularly E. coli bacteria) control their water content, or hydration despite environmental challenges. Now she continues that work with collaborators and would be pleased to share her experience with current Guelph students.
Jasmin Lalonde	jlalon07@uoguelph.ca	Dr. Jasmin Lalonde completed graduate studies at McGill University followed by postdoctoral training at Tufts University School of Medicine and Harvard Medical School. His laboratory in the Department of Molecular and Cellular Biology at the University of Guelph uses cell culture models to discover new molecular mechanisms contributing to the development and plasticity of neuronal cells. He believes that his basic research into these questions will lead to new insights into neuropsychiatric like schizophrenia and potentially help recognize original targets for pharmacological interventions.

Biomedical Sciences

Glen Pyle	gpyle@uoguelph.ca	Glen is a Professor in the Department of Biomedical Sciences and an associate member of IMPART, a translational medicine research group at Dalhousie University Faculty of Medicine. His research team is interested in cardiovascular disease in women and novel therapies for heart failure. The lab is developing a new treatment for heart attacks that was created in collaboration with researchers at Stanford University and Bar-Ilan University. Glen received his BSc in Human Kinetics from the University of Guelph and a PhD in Physiology and Biophysics from the University of Tennessee Health Sciences Centre
Roger Moorehead	rmoorehe@ovc.uoguelph.ca	I have been a faculty member in the Department of Biomedical Sciences at the University of Guelph since 2001. As a new faculty member, I generated a novel transgenic mouse model of mammary tumor development that remains a fundamental model in our lab today. Using this model our lab has furthered our understanding of mammary tumor development as well as differences in proliferation and migration of diverse breast cancer subtypes. More recently, the lab has been focused on understanding the function of microRNAs in breast cancer using cell lines and animal models.
Thomas Koch	tkoch@uoguelph.ca	n/a
Tami Martino	tmartino@uoguelph.ca	Dr. Tami Martino's research program is focused on translating fundamental knowledge about the circadian biology of the cardiovascular system into clinical applications. Her research team investigates how circadian dysregulation drives heart diseases, including myocardial infarction (heart attack), cardiac hypertrophy, and heart failure – our leading causes of death. They also examine how the heart's circadian biology can be therapeutically manipulated to benefit how we heal from disease, using genetic, environmental or pharmacologic approaches to slow or reverse ongoing damage. This pioneering new field of medicine, termed Circadian Medicine, and will lead to longer and healthier lives.
Matthew Vikaryous	mvickary@uoguelph.ca	One of the most fundamental questions in biology is why some tissues, organs, and organisms are able to regrow or regenerate, whereas others cannot. Research conducted by the Vickaryous Lab uses lizards to study naturally evolved mechanisms of regeneration, wound healing, and development. Our current interests include regeneration of the heart, skin, skeleton, and brain, and understanding how organs continue to function while they are being repaired.
Neil MacLusky	nmaclusk@uoguelph.ca	n/a

Clinical Studies

Shane Bateman	sbateman@uoguelph.ca	Shane is currently an Associate Professor in the Department of Clinical Studies at the Ontario Veterinary College and practices as an Emergency/Critical Care specialist in the Companion Animal Medical Complex at OVC's Health Sciences Centre. He was recently named as the Interim Veterinary Director of the Community Healthcare Partnerships Program, a new initiative funded by an $11M gift to OVC in 2019 that will ensure that DVM and graduate students graduating from OVC will have acquired the skills, values, confidence and cultural awareness to deliver veterinary services of the highest possible standard to vulnerable animals and people in diverse inadequately serviced communities and in environments that are poorly resourced. Shane's research is primarily clinical in nature, and is focused in fluid therapy, pain management, and use of bedside ultrasound.

Population Medicine

Anita Tucker	anita.tucker@uoguelph.ca	n/a
Katie Clow	kclow@uoguelph.ca	Dr. Katie Clow is a veterinarian who conducts research on the ecology and epidemiology of vectors and vector-borne zoonoses, with a specific emphasis on the blacklegged tick and Lyme disease. She also conducts research more broadly on the One Health approach, including pedagogy and community-level applications. Dr. Clow has worked in private small animal practice as well as at the national and international level in One Health through internships at the Canadian Food Inspection Agency, Department of Food Safety, Zoonoses and Foodborne Disease at the World Health Organization, and the Global Disease Detection Branch of the Centers for Disease Control and Prevention.

Charlotte Winder	winderc@uoguelph.ca	I'm a large animal veterinarian and epidemiologist, focusing on dairy cattle health and well-being. My lab currently enjoys a broad approach the research cycle, from knowledge synthesis to clinical trials, as well as projects focused on knowledge translation and transfer. My graduate students have quantitative and qualitative epidemiological training. My teaching is mainly in the DVM program, focusing on clinical skills and health management of ruminant species.
Cathy Bauman	cbauman@uoguelph.ca	Dr. Bauman is an assistant professor in the Population Medicine department. She teaches undergraduate Epidemiology and a graduate course on Applied Clinical Research. Her research mainly focuses on field research with producers and their animals or the analysis of datasets. The topics of research she has been involved with to date are: dairy ruminants (large and small), factors affecting survivability of lambs and kids, diagnostic test evaluations, zoonotic infections, clinical trials and the impact of environmental parameters on health