**CURRENT RESEARCH OPPORTUNITIES**

**Graduate Program:** Anatomy & Cell Biology, Biochemistry, Epidemiology and Biostatistics, Family Medicine, Microbiology & Immunology, Pathology & Lab Medicine, Physiology & Pharmacology, Neuroscience, Surgery

**Research Cluster(s):** Cell, Stem Cell and Cancer; Inflammation & Cancer

**Supervisor(s):** Dr. Samuel Asfaha

**Keywords:** Stem cells, inflammation, colities and cancer

**Vacancies:** 2

**MSc/PhD or Postdoc Available?:** PhD (4 years)

**Description:** The Asfaha lab’s primary interest is in gastrointestinal stem cells and their role in tissue regeneration and cancer. The lab has been strongly focused on distinguishing amongst the role of various epithelial stem cells in gut healing. We previously demonstrated that cytokeratin 19 (K19) marks a radio-resistant intestinal stem cell population distinct from classical Lgr5+ stem cells. We also discovered a subset of Dclk1+ cells are long-lived and serve as a cellular origin for colon cancer. Thus, our lab is now focused on how does in inflammation (i.e. colitis) leads to cancer.

**To Apply:** Applicants must independently apply to the Pathology & Lab Medicine program using the online Western [application portal](http://example.com), including a clear reference to the supervisor

**Application Deadline:** None at this time

**Contact Information:** Questions regarding the application process, or inquiries about the program may be addressed to the [Academic Programs Coordinator](mailto:academicprograms@uwo.ca), for more information about the description/design of the project, you may contact Dr. Asfaha directly: [sasfaha2@uwo.ca](mailto:sasfaha2@uwo.ca)
CURRENT RESEARCH OPPORTUNITIES

Graduate Program: Anatomy & Cell Biology, Biochemistry, Epidemiology and Biostatistics, Family Medicine, Microbiology & Immunology, Pathology & Lab Medicine, Physiology & Pharmacology, Neuroscience, Surgery

Research Cluster(s): Cell cultures, genetically modified animal models, western blot, RT-PCR, Co-IP, fluorescent microscopy, molecular biology and biochemical techniques

Supervisor(s): Dr. Tianqing Peng

Keywords: Autophagy, Doxorubicin-cardiotoxicity, Diabetic cardiomyopathy, Mitochondrial stress, Septic organ dysfunction

Vacancies: 2

MSc/PhD or Postdoc Available?: MSc (2 yrs), PhD (4 yrs)

Description: The first project is to investigate the molecular mechanism by which doxorubicin, an effective and widely used anti-cancer drug, causes cardiac injury, and to develop therapeutic approaches to prevent doxorubicin-induced cardiac injury by focusing autophagic flux and lysosomal dysfunction in cardiomyocytes. The second project is to understand how junctophilin-2, a membrane binding protein, maintains normal function of ryanodine receptor Ca2+ release unit in cardiomyocytes and its implications in ischemic heart disease.

To Apply: Applicants must independently apply to the Pathology & Lab Medicine program using the online Western application portal, including a clear reference to the supervisor

Application Deadline: None at this time

Contact Information: Questions regarding the application process, or inquiries about the program may be addressed to the Academic Programs Coordinator, for more information about the description/design of the project, you may contact Dr. Peng directly: tpeng2@uwo.ca
CURRENT RESEARCH OPPORTUNITIES

Graduate Program: Anatomy & Cell Biology, Biochemistry, Epidemiology and Biostatistics, Family Medicine, Microbiology & Immunology, Pathology & Lab Medicine, Physiology & Pharmacology, Neuroscience, Surgery

Research Cluster(s): immunomodulation/immunotherapy for transplant rejection and cancer

Supervisor(s): Dr. Weiping Min

Keywords: immune tolerance, immunotherapy, transplantation, cancer, siRNA/miRNA

Vacancies: 2

MSc/PhD or Postdoc Available?: MSc (2 yrs), PhD (4 yrs)

Description: MinLab is currently recruiting graduate (PhD or MSc) students to carry on exciting work that we are doing using immune modulation for cancer therapy, transplant rejection and autoimmunity. My laboratory has been the first in the world to define a bi-directional feedback loop between T regulatory cells (Treg) and tolerogenic dendritic cells (DCs). This finding sheds new light on how the immune system can be artificially "tricked" into permanently accepting foreign organs in transplantation without having to use systemic immune uppression. Additionally, my laboratory was the first to develop

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Application Deadline: None at this time

Contact Information: Questions regarding the application process, or inquiries about the program may be addressed to the Academic Programs Coordinator, for more information about the description/design of the project, you may contact Dr. Min directly: weiping.min@uwo.ca
CURRENT RESEARCH OPPORTUNITIES

Graduate Program: Anatomy & Cell Biology, Biochemistry, Epidemiology and Biostatistics, Family Medicine, Microbiology & Immunology, Pathology & Lab Medicine, Physiology & Pharmacology, Neuroscience, Surgery

Research Cluster(s): Bioinformatics, Computational Genomics

Supervisor(s): Dr. Parisa Shooshtari

Keywords: Bioinformatics, Machine Learning, Data Analysis, Single-Cell Sequencing, Cancer, Autoimmunity

Vacancies: 2

MSc/PhD or Postdoc Available?: MSc, PhD

Description: Computational Genomics Lab lead by Dr. Parisa Shooshtari is seeking one MSc student and one PhD student to join our team of bioinformatics researchers. Prospective student should have a strong analytical and computational background, and adequate knowledge of genomics. The student will develop computational, statistical and machine learning approaches to analyze multi-omics data, including single-cell sequencing datasets. Our objective is to uncover cellular and molecular mechanisms underlying complex diseases, particularly different cancer types and autoimmune diseases.

To Apply: Applicants must independently apply to the Pathology & Lab Medicine program using the online Western application portal, including a clear reference to the supervisor

Application Deadline: None at this time

Contact Information: Questions regarding the application process, or inquiries about the program may be addressed to the Academic Programs Coordinator, for more information about the description/design of the project, you may contact Dr. Shooshtari directly: pshoosh@uwo.ca
Current Research Opportunities

Graduate Program: Anatomy & Cell Biology, Biochemistry, Epidemiology and Biostatistics, Family Medicine, Microbiology & Immunology, Pathology & Lab Medicine, Physiology & Pharmacology, Neuroscience, Surgery

Research Cluster(s): Cardiovascular Disease, Human Genetics & Genomics, Molecular Biology

Supervisor(s): Dr. Christina Castellani

Keywords: Mitochondrial DNA, Methylation, Heteroplasmy, Epigenomics, Transcriptomics

Vacancies: 2

MSc/PhD or Postdoc Available?: MSc (2 years) PhD (4 years)

Description: Positions are available to explore the association of mitochondrial DNA (mtDNA) variation to nuclear DNA ‘omics in cardiovascular disease. Research projects can comprise one of two main streams towards uncovering molecular mechanisms and pathways that may modify risk for disease. Project Stream 1: Genome analysis of large-scale genomic, methylyomic and transcriptomic datasets. Must have interest in, or experience with, relevant coding languages. Project Stream 2: Developing and characterizing cell culture models of mtDNA variation. Experience with tissue culture or genome editing is ideal.

To Apply: Applicants must independently apply to the program using the online Western application portal, including a clear reference to the supervisor

Application Deadline: None at this time

Contact Information: Questions regarding the application process, or inquiries about the program may be addressed to the Academic Programs Coordinator, for more information about the description/design of the project, you may contact Dr. Castellani directly: christina.castellani@schulich.uwo.ca