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, Sepsis organs 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**

<table>
<thead>
<tr>
<th>Graduate Program:</th>
<th>Anatomy &amp; Cell Biology, Biochemistry, Epidemiology and Biostatistics, Family Medicine, Microbiology &amp; Immunology, Pathology &amp; Lab Medicine, Physiology &amp; Pharmacology, Neuroscience, Surgery</th>
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<tr>
<td>Research Cluster(s):</td>
<td>immunomodulation/immunotherapy for transplant rejection and cancer</td>
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<tr>
<td>Supervisor(s):</td>
<td>Dr. Weiping Min</td>
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<tr>
<td>Keywords:</td>
<td>immune tolerance, immunotherapy, transplantation, cancer, siRNA/miRNA</td>
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<td>Vacancies:</td>
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<tr>
<td>MSc/PhD or Postdoc Available?:</td>
<td>MSc (2 yrs), PhD (4 yrs)</td>
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| 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 |

| 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. 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): Cell, Stem Cell and Cancer; Inflammation & Cancer

Supervisor(s): Dr. Samuel Asfaha

Keywords: Stem cells, inflammation, colites 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 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, 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. Asfaha directly: 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):

Supervisor(s): Dr. Saman Maleki

Keywords: Cancer Immunotherapy, tumor immunology, neoantigen

Vacancies: 2

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

Description: Project 1: We are studying the effect of neoantigen induction on tumor immune profile and response to immunotherapy among cancers with various degrees of tumor mutation burden.

Project 2: We are studying the underlying mechanisms of tumor-specific T-cell formation in various cancers and also in patients who are treated with immunotherapy.

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. Maleki directly: saman.malekivareki@lhsc.on.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: | 1 |
| MSc/PhD or Postdoc Available?: | MSc |
| Description: | Computational Genomics Lab lead by Dr. Parisa Shooshtari is seeking one MSc student to join our team of bioinformatics researchers. |

**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 OPPORTUNITY FOR THE MICROBIOLOGY & IMMUNOLOGY PROGRAM

Graduate Program: Microbiology & Immunology
Research Cluster(s): HIV
Supervisor(s): Dr. Art Poon
Keywords: Bioinformatics, phylogenetics, virus evolution, HIV, molecular epidemiology
Vacancies: 2 (see below)
MSc/PhD or Postdoc Available?: Masters, Doctoral
Description: Graduate positions are available in the Poon lab to investigate the evolution of HIV-1 within hosts through the development and application of new phylogenetic methods. Prospective students must have prior experience in computer programming and working through a command line interface (if granted an interview, applicants should expect to be tested on their ability to code). Previous training in molecular evolution, probability and stochastic processes through undergraduate or graduate courses is recommended.

To Apply: Applicants must independently apply to the Microbiology & Immunology program using the online Western application portal, including a clear reference to the supervisor (Please insert anything needed in addition to the traditional application)

Application Deadline: N/A
Contact Information: Questions regarding the application process, or inquiries about the program may be addressed to the Academic Programs Coordinator, if trainees have questions with regard to the description above, you may contact Dr. Poon directly: apoon42@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):** Transplantation

**Supervisor(s):** Dr. Zhu-Xu Zhang and Dr. Anthony Jevnikar

**Keywords:** Cell death, apoptosis, necroptosis, heart cell, inflammatory molecules

**Vacancies:** 2

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

**Description:** We were the first to describe necroptosis in organ ischemia injury and transplant rejection. We have found that RIPK1/3 function results in necrotic death and danger molecule release in heart and kidney cells. Most recently we have demonstrated that mitochondria critically participate in necroptosis as well as apoptosis. We are now studying the molecular path of necroptosis and try to identify new mechanisms for cell death. We are searching for self-motivated master and PhD students interested in studying the mechanism(s) of cell death.

**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. Zhu-Xu Zhang directly: zhuxu.zhang@lhsc.on.ca