

CURRENT RESEARCH OPPORTUNITIES

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

Research Cluster(s):

Supervisor(s): Dr. Keith St. Lawrence

Keywords: biomedical optics, NIRS, cerebral blood flow, brain injury, critical care

Vacancies: 1

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

Description: Optics provide a non-invasive means of assessing key metrics of brain health at the bedside of critical-care patients. This project will focus on translating an in house-developed optical system to the Intensive Care Unit with the aim of evaluating its ability to detect impaired cerebral blood flow and oxygen delivery before brain injury can occur. The project will provide the student with the opportunity to learn about emerging technologies and help assess their clinical value.

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. St. Lawrence directly: kstlawr@uwo.ca

CURRENT RESEARCH OPPORTUNITIES

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

Research Cluster(s): Imaging

Supervisor(s): Dr. Lisa Hoffman

Keywords: Duchenne muscular dystrophy, microvasculature, heart and skeletal muscle, brain, molecular imaging

Vacancies: 2

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

Description: Overarching Objective: to rescue abnormal microvasculature in Duchenne muscular dystrophy (DMD) to reduce ischemia, chronic inflammation and fibrosis. Hypothesis: Delivery of Ang-1 will restore vascular integrity, and diminish ischemia, inflammation and development of fibrosis, re-establishing a microenvironment that supports repair. Students will use below methods to fully characterize abnormal microvasculature in both DMD mouse and patient samples, to improve endogenous tissue repair, minimize fibrosis, and enhance the efficacy of cell replacement therapy for the treatment of DMD.

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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. Hoffman directly: lhoffman@lawsonimaging.ca

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Research Cluster(s):

Supervisor(s): Dr. John McGuire

Keywords: blood vessels, Protease activated receptor 2, endothelial cells, transgenic mice, blood pressure

Vacancies: 2

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

Description: Recruiting full-time graduate students to conduct 'wet lab'-based basic science thesis research in the area of vascular and circulatory health with focus on blood vessels and the endothelium. Funded by the Canadian Institutes of Health Research. For a summary of the Project follow the link https://webapps.cihr-rsc.gc.ca/decisions/p/project_details.html?applId=461655&lang=en

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. McGuire directly: john.mcguire@schulich.uwo.ca

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

Research Cluster(s): Imaging

Supervisor(s): Dr. Jean Theberge and Dr. Andrew Nicholson

Keywords: Optimization of real-time fMRI Neurofeedback

Vacancies: 1

MSc/PhD or Postdoc Available?: MSc, PhD (2-5 years)

Description: The goal of this project is to develop and optimize our existing real-time fMRI scanning methods to allow connectivity-based neurofeedback in the emotion regulation network involved in PTSD. The candidate will assist with scanning participants and fMRI data in studies applying these methods to characterize associations between neural network plasticity and PTSD symptoms. We are looking for a student with a physics or medical biophysics background. Knowledge of fMRI and/or MRI physics would be a bonus

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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. Theberge directly: jtheberge@lawsonimaging.ca

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Research Cluster(s):

Supervisor(s): Dr. David Seminowicz

Keywords: Pain, neuroimaging, cognition, fMRI, EEG

Vacancies: 2

MSc/PhD or Postdoc Available?: MSC, PhD, Postdoctoral Scholar (4 years)

Description: Possible projects include:
7T fMRI deep phenotyping studies to understand the role of the claustrum in cognitive control
Simultaneous EEG-fMRI studies in pain and cognition
Development and validation of an EEG-based biomarker of pain sensitivity
Longitudinal fMRI studies of treatments for chronic musculoskeletal pain
Skills (that you have or will acquire):
Neuroimaging data acquisition, management, analysis
Psychophysics/quantitative sensory testing
Human subjects research
Use of R, Python, and/or Matlab
Experimental design
Open science practices

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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. Seminowicz directly: dseminow@uwo.ca

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Research Cluster(s):

Supervisor(s): Drs. Michael Kovacs & Donna Goldhawk

Keywords: PET, cyclotron, bacteria, bacteriophage, 89Zr

Vacancies: 1

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

Description: By 2050, more people will die from bacterial infections than from cancer if new treatments are not developed. Today, medical imaging can only see the damage to our bodies caused by infection. If instead bacteria themselves could be imaged and their species identified, then treatment could start with more selective therapy before tissue is damaged. To address this need, we are developing the means to track bacteria by directly labelling these cells with 89Zr and using simultaneous positron emission tomography/magnetic resonance imaging (PET/MRI) to image 89Zr-labelled bacteria in vivo.

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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. Kovacs directly: mkovacs@lawsonimaging.ca