

Job Posting – 2023

Postdoctoral Fellow

Nanopore sensors for disease diagnostics at ultra-low biomarker concentrations

Research Area: The Godin lab develops microfluidic and nanofluidic technologies for biomedical therapeutic and diagnostic applications. Our multidisciplinary approach to research allows us to apply science and engineering ideas with impact in the health sector.

We are immediately looking for a highly-skilled and motivated postdoctoral researcher to contribute to the development and characterization of a novel multifunctional microfluidic chip to pre-concentrate wide ranges of proteins in human body fluid samples and digitally sensing them using integrated solid-state nanopores. This interdisciplinary and fully funded project would open up many exciting applications such as evaluation of the efficacy of cancer immunotherapy and detection of traumatic brain injury using ultra-low concentrations of biomarkers.

Description of Duties: Responsibilities will include but not limited to

- Conceive, conduct layout and component design, build and validate innovative microfluidic devices for highly parallel biosample sensing.
- Developing associated hardware control and data acquisition software interfaces as well as modifying instruments, consumables, reagents, protocols, and analyses methods.
- Working with the team at the Godin lab, external and internal collaborators on background research, literature reviews, and analysis of competing/existing methods/technologies.
- Planning and executing a series of experiments. This will consist of individual and collaborative work from bench level pipetting through to analysis and reporting.
- Regularly reporting and documenting plans and results in different formats and timescales, from weekly meetings to grant reports and publications.

Required Qualifications:

- We expect that this new member will be a well-organized, enthusiastic team player with excellent verbal and written communication skills, who enjoys lab work, while not afraid of trying new ideas and creative problem-solving.
- PhD degree granted in the last 5 years, either in science or engineering discipline with a focus on biomedical engineering, mechanical engineering, Physics or a closely related field.
- A strong background in microfluidics and microfabrication is required. Experience with molecular sensing with nanopores is an asset. Experience on instrumentation and DAQ for characterization of microfluidics devices, and simulation for design optimization and validation is a plus.
- Strong analytical skills to interpret and draw conclusions, from limited to large amounts of data.
- Software skills: Labview, Python, SolidWorks, AutoCAD, ImageJ.

Supervisor: Professor Michel Godin (<http://GodinLab.uottawa.ca>)

Expected start date: Immediate (the start date is flexible and can be adjusted based on availability).

Term: The first contract will be for 12 months. However, this is likely to be extended upon mutual agreement and funding availability. This is a full-time postdoctoral fellow position, typically requiring 40

hours per week commitment. This position is guided by University of Ottawa policy. Details regarding employment benefits and conditions are available here: <https://www.uottawa.ca/graduate-studies/postdoctoral-fellows/steps>

Salary: \$45,000-\$55,000 (depending on level of experience)

Application Instructions: Applicants should submit a cover letter, CV and names of three individuals capable of providing references. Reference letters are not required in the initial application (they will be requested for those selected for interviews). The cover letter should highlight your expertise, your research interests and your fit in regards to this position. Please submit your application using the form available on the Godin Lab website: <https://godinlab.uottawa.ca/Opportunities.html>

For additional information, please contact Professor Michel Godin (michel.godin@uottawa.ca)