

**Position: Post-Doctoral Research Fellow**

**General Description:** The goal of the project is to create novel bacteria and virus detection sensors based on the optical, immunomagnetic, and rapid PCR technology and investigate of use of aptamers in place of antibodies for the same purpose. New and existing aptamers specific to pathogenic bacteria will be researched and created. Rapid detection methodologies with the emphasis on low pathogen concentration detection will be developed. Microfluidics will be used extensively to develop new detection methodologies and sensors. The resulting sensors will be tested against various pathogenic bacteria concentrations ( $10^1 - 10^5$  CFU/mL). The sensors will be used together with the automated sampling unit to measure the response generated by the sensors when exposed to water samples.

**Primary Job Functions:** Assist in the development of the bio-sensor that will be used in the detection of the pathogenic bacteria. Assist in development of experiments, equipment and the prototype sensor designs necessary to conduct experiments based on electrochemical, opto-chemical, and opto-electrical detection methodologies. Assist in conducting the experiments in BSL1 and BSL2 lab environments. Independently and as part of the team research the relevant sensor methodologies found in the literature. Research and establish a supplier network for biochemical sensor components.

**Required skills:**

- **Practical experience with PCR based pathogen detection systems**
- **Experience working in BSL 1 and BSL 2 facilities**
- **Experience with bio-chemical, microbiology and immunology research**

**Desired skills:**

- **Practical experience with culture protocols for pathogenic bacteria, including Salmonella and E. coli, and viruses**
- **Experience working with or developing novel aptamers**
- **Sensor development experience**

**Experience:** Post-Doctoral experience with pathogen detection, aptamer research and/or sensor development will be considered an asset.

**Education:** PhD in Biochemistry, Microbiology, Immunology, or related field.

**Work status:** Full time

**Location:** Sydney, Nova Scotia

**Reporting:** Direct to CEO

**Compensation:** Commensurate with experience

**All interested and qualified candidates are asked to submit their resumes/cv to [info@verschurencentre.ca](mailto:info@verschurencentre.ca) prior to July 23<sup>rd</sup>, 2021**

