

Visiting scholar opportunities for laboratory professionals

The NSO laboratory is offering an opportunity to one interested laboratory professional to be a visiting scholar. The training will take place over a 5-week period, between September and December of every year. The exact dates will be confirmed with the selected visiting scholar. ONE position is available yearly.

The rotation will include a comprehensive series of discussion meetings with selected subject-matter experts as well as observation of the workflows in the Biochemistry and Molecular laboratories.

Discussion meetings:

Topics that will be covered include 1) laboratory-specific aspects, such as screening performance, quality indicators, etc.; 2) non-laboratory newborn screening diseases, such as the Critical Congenital Heart Disease screening and the Hearing screening; 3) programmatic leadership aspects, such as provider and parent education, specimen transportation, research opportunities, carrier detection, and much more.

Laboratory exposure:

The rotation will allow the visiting scholar to spend extensive time in the laboratory to review the various workflows. The visiting scholar will be able to observe a high-volume screening laboratory with 1) its highly efficient specimen pre-analytical procedures; 2) its usage of a variety of mass spectrometers (flow-injection and liquid-chromatography); 3) its operation of several automated analytical instruments; 4) its quality assessment tools to provide high quality reports. Due to provincial regulations, there will not be an option to perform direct laboratory experiments.

About NSO:

Newborn Screening Ontario (NSO) coordinates newborn screening (NBS) for the province of Ontario. NSO is a specialty laboratory, performing Biochemical and Molecular screening assays using Dried Blood Spot (DBS) samples collected on filter paper to identify pre-symptomatic patients.

Biochemistry laboratory:

Technologies and methodologies used to perform NBS include tandem mass spectrometry, automated enzymatic analysis (Spot check Pro), automated immunofluorescent analysis (Genetic Screening Processor) and High-Performance Liquid Chromatography (HPLC). Using liquid chromatography mass spectrometry (LC-MS) and gas chromatography mass spectrometry (GC-MS), the NSO Biochemistry laboratory also provides diagnostic testing for at risk or symptomatic patients and monitoring tests for diagnosed patients.

Molecular laboratory:

Using DNA prepared from the NBS DBS, the NSO molecular laboratory performs molecular based screening assays using Realtime qPCR, Mass Array, ddPCR, Next Gen and Sanger Sequencing. Risk factor screening for permanent hearing loss is performed in the molecular laboratory testing the NBS DBS sample for Cytomegalovirus (CMV) and common genetic risk factors. The molecular laboratory also offers diagnostic testing using Realtime qPCR, Mass Array, Next Gen and Sanger Sequencing, and other custom molecular assays. Postmortem and cord blood screening services are also provided.

Application process:

Interested candidates will need to submit their application before **MAY 10** of every year. Applications can be submitted through the NSO website. The application should include:

- a. A letter of interest that provides the objectives of the training at NSO
- b. A summary of the current approach to newborn screening in your country
- c. A description of the current diagnostic tests available to your laboratory to provide laboratory follow-up to newborn screened positive patients
- d. A description of the resources (instrumentation, staff, space) available for method development, and an example of a recently completed method development project. One page maximum.
- e. A copy of the CV
- f. A brief description of the funding support available to cover travel and accommodation

Communication of Candidate selection:

Candidates will be informed by AUGUST 1 on the acceptance as the Visiting scholar.
We truly appreciate your interest in visiting the NSO program and laboratory.