

**Professional Associate – Scientific**  
**Chemist II Fellow**  
**Division of Public Health**

This is the most advanced level of professional chemistry work requiring an application and in-depth understanding of chemical methods, chemical theory and the principles of related sciences, to evaluate, develop, conduct and interpret the results of the most complex qualitative and quantitative chemical analyses on a wide variety of substances. Employees usually operate under very limited or no technical direction with broadly defined objectives and functions. Employees may often determine their own projects, priorities and deadlines and function as a technical expert or master in a specialty area. Employees evaluate, select, arrange, modify and develop complex laboratory equipment and elaborate instrumentation to implement the most complex testing operations.

**Project Description:**

The North Carolina Newborn Screening (NBS) program screens all North Carolina newborns for conditions listed on the state's newborn screening panel using a dried blood spot (DBS) specimen collected via heel prick. The NBS program is planning a project to prepare the laboratory for second-tier testing for the condition, Congenital Adrenal Hyperplasia (CAH). Second-tier testing involves the use of more specific laboratory methodology to identify risk for a condition. When used in conjunction with first-tier testing, this additional methodology allows the laboratory to maintain its high throughput capabilities while improving its positive predictive value (PPV) for certain conditions. This project will involve working directly with the NBS MS/MS Team, including the Tandem Mass Spectrometry (MS/MS) Laboratory Supervisor and NBS MS/MS Public Health Scientist to learn about a 5-panel steroid screen that helps reduce the number of false positives and adds specificity. Additional opportunities in this project include learning about the principles of MS/MS technology, developing an MS/MS method on the instrumentation, creating a method validation plan, supporting with workflow development and laboratory readiness, and collaborating with NCSLPH and external partners in NBS Follow-up to establish a reporting structure. This project will strengthen the newborn screening services in North Carolina by enhancing reporting for the NBS condition, CAH.

**Management Preferences:**

- Working knowledge of the state and federal laws and regulations pertinent to clinical testing.
- Ability to establish and maintain effective working relationships.
- Solid background in wet chemistry, extractions, chemical derivatization and small molecule quantitation.
- Previous supervisory experience or proven leadership skills in a laboratory setting
- Ability to train lower-level chemists and technicians in performing complex procedures and techniques, and to prepare technical reports from analytical results obtained.
- Ability to express technical information clearly, both orally and in writing, when reporting results and explaining procedures to others.
- Ability to adapt and modify techniques to enhance accuracy, reliability, and timeliness.

- Ability to analyze results, interpret and evaluate methodologies, understand, and solve complex theoretical problems.
- Ability to perform advanced mathematics and statistical analysis to understand and follow moderately complex oral and written instructions, to perceive colors normally and to make olfactory distinctions.

## **Knowledge, Skills, and Abilities**

- Must meet federal CLIA '88 requirements for testing personnel in a high complexity laboratory. Candidates must attach a copy of their transcript(s) and/or certification(s) in order to be considered.
- Experience reviewing laboratory data for quality assurance purposes including QC review, kit verifications, instrument comparisons, developing Standard Operating Procedures (SOPs) and verifications/validations.
- Experience using Microsoft computer applications, including a LIMS system.
- Two or more years of experience working with potentially infectious materials.
- Experience understanding and interpreting large data sets and reporting results.
- Experience with liquid chromatography (HPLC) and mass spectrometry (MS) techniques.
- Thorough knowledge of theoretical principles of analytical chemistry and instrumental procedures.
- Knowledge of scientific methodology and of the hazards involved in laboratory procedures along with related safety practices.
- Ability to independently perform and record standardized, non-standardized and fairly complex laboratory tests and procedures with a high degree of precision and accuracy.
- Ability to understand and perform basic mathematical calculations, problem solve and troubleshoot problems with a method of analysis and communicate method and procedures to others.
- Ability to understand and solve simple theoretical problems, and to provide work direction and instruction to other technicians concerning a variety of chemical procedures.

## **Minimum Education and Experience**

Bachelor's degree in chemistry from an appropriately accredited institution