

**U.S. Environmental Protection Agency  
Region 5 Central Regional Laboratory (CRL) Research Participation Program  
Oak Ridge Institute for Science and Education (ORISE)**

**Project # EPA Region 5 2004-02**

**Project Background:**

A project is available through the Environmental Protection Agency (EPA) Research Participation Program. The appointee will be located at EPA facilities in Chicago, Illinois. The anticipated starting date is June 2004. The purpose of this investigation is to understand the fate of Alkylphenols and its Ethoxylates (APES) in water, soils, land applied biosolids and digester sludge. Current CRL alkylphenol methods may be improved depending on the findings related to this study. An alkylphenol method for sludge will be developed by the research associate along with methods for analyses in environmental waters utilizing LC/MS. Improved methods will be developed utilizing solid phase extraction in order to analyze water samples. Another project is the development of the methods for the analysis of APES in fish tissue.

**Objectives:**

Project elements will include, but not be limited to: detailed analysis of environmental samples by GC/MS and/or LC/MS, preparation of environmental samples, preparation of visual materials for oral presentations and communications. The research associate will apply organizational and communication skills and technical knowledge successfully to complete project elements in a timely manner.

**Specific Tasks:**

The research associate will be trained by CRL staff scientists in the analysis and reporting of environmental data and the planning and conducting of oral or poster presentations. Specific tasks and learning opportunities may include, but not be limited to the following:

- X Extraction of environmental samples utilizing accelerated solvent extraction, solid phase extraction or liquid-liquid extraction.
- X Environmental samples may include but not limited to: soils, sludges, water and fish.
- X Interpretation of the data including statistical analyses, review of quality assurance data, preparation of tables and figures
- X Writing of papers to be presented at a conference and/or to be issued as post-conference reports.
- X Help to create or improve current methods and technologies.
- X Assist CRL scientists to plan and implement various logistic elements regarding future projects.

This project is intended for an entry level chemist and will include more guidance from CRL staff. However, once the intern becomes comfortable performing tasks on their own less oversight from CRL staff is expected.

## **Benefits to the Research Associate:**

During this project the research associate will:

- X learn about the many complex environmental analyses concerning CRL
- X increase skills in data analysis and reporting.
- X learn the many facets required to plan and implement a complex project
- X learn roles and responsibilities for working as part of a team
- X obtain professional contacts around the country
- X increase sense of professional responsibility

## **Qualifications:**

Required:

- X Minimum Degree Requirement: Baccalaureate degree in a physical science, preferably a chemistry background with environmental experience
- X Excellent English verbal and written communication skills
- X Ability to quickly learn computer software programs as needed, e.g., analytical instrumentation analysis, scientific graphing, and presentations.
- X Well versed in using analytical equipment, especially GC/MS and/or LC/MS and extraction technology.

Strongly Desired:

- X Knowledge of GC/MS systems and ability to analyze samples
- X Computer skills, including proficiency in word processing (such as WordPerfect and Microsoft Word), spreadsheet manipulation (such as Microsoft Excel), and presentation graphics (such as PowerPoint).
- X Proficient in analytical techniques especially in the ability to prepare solutions and quantitative transfer procedures.
- X Pleasant and cooperative inter-personal skills.
- X Ability to travel overnight to attend occasional meetings.

## **Background Information:**

As an U.S. EPA laboratory responsible for implementing the monitoring environmental concerns, CRL has a fundamental role to collect, analyze and disseminate data on the physical, chemical and biological integrity. The primary domain of CRL is to apply analytical chemistry to environmental samples to generate data in support of environmental research.

## **Additional Information:**

The Research Participation Program for EPA Region 5 is administered by the Oak Ridge Institute for Science and Education. ***Please reference Project # EPA Region 5 2004-02 when calling or writing for information.*** For additional information and application materials contact: Research Participation Program/EPA, Attn: Betty Bowling, Science and Engineering Education - MS 36, Oak Ridge Institute for Science and Education, P.O. Box 117, Oak Ridge, Tennessee 37831-0117, Phone: (865) 576-8503 FAX: (865) 241-5219 e-mail: [bowlingb@ornl.gov](mailto:bowlingb@ornl.gov).