Opportunity Title: Sensor Evaluation and Validation Fellowship - CDC
Opportunity Reference Code: CDC-NIOSH-2018-0035

Organization Centers for Disease Control and Prevention (CDC)

Reference Code CDC-NIOSH-2018-0035

How to Apply A complete application consists of:

- An application
- Transcripts – Click here for detailed information about acceptable transcripts
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

All documents must be in English or include an official English translation.

If you have questions, send an email to *CDCrpp@orau.org*. Please include the reference code for this opportunity in your email.

Description A fellowship opportunity is available to support the NIOSH Center for Direct Reading and Sensors Technology (NCDST), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC), in Cincinnati, Ohio.

Assessment of workplace exposures is critical in occupational safety and health. Workplace exposure monitoring, based on strategies to demonstrate that workplace exposures do not exceed occupational exposure limits, often requires complex sampling and analytical procedures that result in a significant lag time in receive monitoring results. In addition, exposure to many workplace chemicals often results in worker reports of symptoms even when exposures are below occupational exposure limits. This is indicative of short-term peak exposures that are frequently missed by traditional time weighted average (TWA) sampling. Direct reading instruments and methods may provide real time or near real time exposure levels so that unsafe levels can be identified and mitigated immediately.

The goal of this project is to develop and/or evaluate and validate readily adaptable, next generation, direct reading, personal monitor (DRPM) for use in measuring worker exposure to a wide variety of chemicals. Workplace exposure to volatile and semi-volatile chemicals constitutes a significant risk factor for occupational illness.

NIOSH is conducting laboratory and field studies with direct reading instruments and methods to measure worker exposure to occupational chemical hazards. NIOSH researchers are developing and validating improved methods for monitoring worker exposures to gases and vapors. Specifically, the study aims to define the correlation(s) between workplace air concentrations of contaminants as measured by traditional industrial hygiene methods and compare these to measurements from real-time instruments to evaluate and validate dosimeter measurements of exposure.

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The fellow may be involved in the following activities:

1) Assisting in instrument evaluation in the laboratory

a. measuring volatile organic compounds (VOC) by portable gas chromatograph (GC)

b. collecting and analyzing volatile organic compounds (VOC) by NMAM methods using GC/MS and GC/FID

c. assisting in analysis of whole-air grab samples by GC-Time of flight Mass Spectroscopy

2) Assisting in instrument evaluation in the field

a. measuring volatile organic compounds (VOC) by portable gas chromatograph (GC)

b. collecting and analyzing volatile organic compounds (VOC) by NMAM methods using GC/MS and GC/FID

c. assist in analysis of whole-air grab samples by GC-Time of flight Mass Spectroscopy

d. video exposure monitoring of VOCs by FLIR camera and direct reading instruments

3) Assisting in all data analyses.

* Desired start date June 2018*

* Length of appointment: 3 months *

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and CDC. The appointment may be renewed upon recommendation of CDC contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at CDC in the Cincinnati, Ohio, area. Participants do not become employees of CDC, DOE or the program administrator, and there are no employment-related benefits.

Qualifications

- Applicant should be in a graduate student with a bachelor’s degree in Chemistry, Biology or physical sciences.
- Knowledge of common laboratory instruments and techniques i.e. pipetting, balances
- Knowledge of laboratory methods and standard operating procedures
- Knowledge of gas chromatographs and other instruments
- Basic computer skills and understanding of data management

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- Knowledge of quality assurance/quality control procedures

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Computer, Information, and Data Sciences** (16 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (13 👁)
  - **Life Health and Medical Sciences** (45 👁)
  - **Mathematics and Statistics** (10 👁)
  - **Physics** (16 👁)
  - **Science & Engineering-related** (1 👁)