

**Postdoctoral Research Associate in Mercury
Biogeochemistry**

**Environmental Sciences Division
Biological and Environmental Sciences
Oak Ridge National Laboratory
Oak Ridge, Tennessee**

ORNL08-89-ESD

Project Description:

Oak Ridge National Laboratory (ORNL) seeks a highly motivated and creative individual skilled in experimental biogeochemistry to work on a project investigating the effect of coupled geochemical, microbiological, and hydrological processes on mercury (Hg) transformations leading to the formation and destruction of methyl mercury in sediment-surface water systems. Current research at ORNL in this area spans from the molecular to the field scales although for this position work will be conducted at the laboratory microcosm to field scales. The integration of field, laboratory, and simulation research will be used to inform decisions related to environmental remediation and long-term stewardship of terrestrial and aquatic systems.

The successful candidate will focus their research efforts on understanding the geochemical and microbiological processes that control Hg transformation at an industrially contaminated site on the Oak Ridge Reservation. The biogeochemical controls on transformations that sustain methyl mercury concentrations in this system are poorly understood. The system in question is highly dynamic with large water fluxes and active oxidation-reduction transition zones. The successful candidate will have the opportunity to work with microbiologists studying the genetic determinants of Hg transformations. These research results will be integrated into an improved understanding of the global biogeochemical Hg cycle.

The technical resources available at ORNL are outstanding and the opportunities to participate in multi-disciplinary research are exceptional. The Environmental Sciences Division at ORNL has a strong core expertise in laboratory to field scale geochemistry and microbiology. Complementary laboratory and field-scale investigations are coupled with computer simulations to improve the understanding of controlling mechanisms down to molecular scales. ORNL hosts two world-class neutron sources (<http://neutrons.ornl.gov/>); development and application of neutron scattering methods to this project are encouraged. In addition, ORNL also offers programs of excellence in sensors and sensor networks, and nanobiotechnology. Opportunities exist to collaborate with skilled researchers in hydrology, geochemistry, environmental microbiology, and ecology within ORNL, at collaborating Universities and other National Laboratories.

Qualifications:

This position requires a Ph.D. in environmental chemistry, geochemistry, soil science, or a related discipline. Experience in Hg research, applying (bio)geochemical models, and the analysis of kinetic data is desired. While not required, familiarity with voltammetric

microelectrodes and modern techniques in microbiology would be an asset. Strong oral and written communication skills are required. The candidate must have the ability to work in a team environment and interact effectively with a broad range of colleagues. Applicants cannot have received the most recent degree more than three years prior to the date of application and must complete all Ph.D. degree requirements before starting their appointment.

How to Apply:

Qualified applicants must apply online at https://www2.ornl.gov/ORNL_POST/. All applicants will need to register before they can begin the online application. For complete instructions, on how to apply, please see the instructions at <http://www.ornl.gov/orise/edu/ornl/ornl-pdpm/application.htm>. When applying for this position, please reference the position title and number.

This appointment is offered through the ORNL Postgraduate Research Participation Program and is administered by the Oak Ridge Institute for Science and Education (ORISE). The program is open to all qualified U.S. and non-U.S. citizens without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.