Internship Program Opportunities
U.S. Environmental Protection Agency
Office Of Water
Washington, D.C.

Project # EPA Water 2008–113

Watershed and Water Quality Modeling

An internship project is available at the U.S. Environmental Protection Agency's (EPA) Office of Science and Technology (OST) in Washington, DC.

About the Program: EPA partners with authorized states and tribes to manage water quality programs to protect and restore the environment health of the nation's waters.

In 1972, Congress created the Clean Water Act (CWA) to address serious pollution problems affecting the nation's rivers, lakes and coastal waters. The central objective of the Act is to "restore and maintain the chemical, physical and biological integrity of the nation's waters." The CWA is a comprehensive set of programs and requirements designed to address the complex problems caused by a wide variety of pollution sources.

The Modeling and Technical Support Team oversees the development and dissemination of software tools for conducting watershed and water quality analyses, especially the BASINS (Better Assessment Science for Integrating point and Nonpoint Sources) decision support system, and the Aquatox aquatic ecosystem simulation model. Recent changes to BASINS resulted in the first version (4.0, released in Spring, 2007) that operates within a free, open-source GIS platform, known as "MapWindow". This move to an open-source environment for BASINS has spurred growth in the BASINS user community, and an increase in interest by external entities (other EPA offices, other Federal Agencies) in BASINS as a platform for various environmental models and tools. One result is that several well-established watershed and waterbody models (e.g. SWMM, WASP, GWLF), are in the process of being incorporated into BASINS for the first time. Additional models (CE-QUALW2, N-SPECT) supported by other federal agencies are being actively considered for incorporation as well.

Project Description: OST is seeking an individual who is interested in being trained to support efforts that will strengthen BASINS and support its user community. Specifically, OST is looking for an individual to join a dynamic team focused on how to use environmental modeling to better inform EPA, state, and municipal decision makers on options for improving water and watershed management decisions and activities in support of Clean Water Act goals.

Specific Tasks: The applicant may be involved in any or all of the following kinds of projects.

1. Developing modeling case studies that highlight the use of various watershed and/or waterbody models, particularly those in BASINS.
2. Developing new BASINS plug-ins or tools using Visual Basic, Visual C++, or Visual C# programming languages.
3. Beta testing and/or troubleshooting new BASINS features including models, modules, and GIS tools.
4. Writing and presenting notes, papers, and similar materials about new BASINS tools, and/or modeling case studies.

5. Developing training materials for new BASINS models and tools, and/or assisting in conducting training classes on BASINS.
6. Assisting OW and OST staff with scientific analyses in general.

Expected Results: As the primary focus of OW's water modeling activities, BASINS is an important tool for water quality protection and restoration efforts throughout the United States, and throughout the world. The intern will gain an understanding of how various models and GIS tools are used in the regulatory arena, and how they can be used to address scientific issues. In addition, the intern's contributions will help to improve EPA's ability to provide stakeholders with the most effective possible modeling support.

Intern Qualifications and Skills: Applicants should have received a master's degree in environmental engineering, agricultural/biological engineering, or environmental science received within four years of the desired starting date, or completion of all requirements for the degree should be expected prior to the starting date. Applicants with a master's degree in ecology with demonstrated academic focus on modeling will also be considered. Applicants should possess excellent writing, oral and analytical skills, be creative and technology savvy and have the ability to perform in a fast-paced team environment. In addition, applicants must have experience with Microsoft Word and Excel, be comfortable with a wide variety of office computer applications and have the ability to use presentation graphics.

The program is open to all qualified individuals without regard to race, sex, religion, color, age, physical or mental disability, national origin, or status as a Vietnam era or disabled veteran. U.S. citizenship or lawful permanent resident status is preferred (but can also hold an appropriate visa status, however, an H1B visa is not appropriate). The intern must show proof of health and medical insurance. **The intern does not become an EPA employee**.

Stipend and Length of Appointment: The appointment is full time for one-year and may be renewed for two additional years depending on the availability of funding. A period shorter than twelve months may also be possible, but must be for at least three months. The annual stipend will be up to $48,000, depending on degree, experience, and level of participation.

The EPA mentor for this project is Jim Carleton. He can be contacted at (202) 566-0445 or at carleton.jim@epa.gov.

The Internship Program for EPA Water is administered by the Oak Ridge Institute for Science and Education (ORISE). *Please reference Project # EPA Water 2008-113 when calling or writing for information.* For additional information and application material contact: Internship Program - EPA Water, Attn: Betty Bowling - MS 36, ORISE, P.O. Box 117, Oak Ridge, Tennessee 37831 Phone: (865) 576-8503 Fax: (865) 241-5219 email:betty.bowling@orau.org

Sam Bryant serves as the EPA Office of Water internship program coordinator. His email address is bryant.samuel@epa.gov.

An application can be found at http://www.orau.gov/orise/edu/EPA/app-gugrgpd.pdf