



Applying knowledge to improve water quality

Pacific Northwest

Regional Water Program

A Partnership of USDA NIFA
& Land Grant Colleges and Universities

Summer 2009
PNWWATER 163

University of Idaho's REU Program: *Enhancing Student Training*

In late 2007 the Environmental Science program was awarded a National Science Foundation REU project titled "Summer Research Experience for Undergraduates in Sustainable Water Resources." The overall goal of this three year summer project under the leadership of University of Idaho faculty member Dr. Robert Mahler is to involve 10 different undergraduate students each summer in a nine-week research experience that inspires them to continue on to graduate study and to pursue sustainability, water resources, and/or environmental science careers. To accomplish this goal the University of Idaho selects 10 students from a very competitive applicant pool each spring from colleges across the country. This summer research experience is designed to:



The Summer 2008 REU participants at the University of Idaho.

- ◆ Develop students' skills in scientific methods, equipment, and instrumentation use
- ◆ Lead students to greater independence in scientific thought
- ◆ Help students determine and pursue their interests in sustainable water resources to help them successfully pursue further research in graduate school or in a career
- ◆ Offer students professional development and teamwork training through shared activities

Each student is paired with a faculty mentor on the Moscow campus who does research in a water related area. In the summers of 2008 and 2009 15 different University of Idaho faculty have been paired with students. These University of Idaho water/environmental science faculty include: Jan Boll (Hydrology), Aaron Brooks (Hydrology), Susan Childers (Geology), Fritz Fielder (Civil Engineering), Katherine Kavanagh (Forest Ecosystems), Timothy Link (Forest Hydrology), Robert Mahler (Soil Science), John Marshall (Forest Resources), Christine Moffitt (Fisheries), Matt Morra (Soil Biochemistry), Chris Peery (Fish Ecology), Dan Strawn (Soil Chemistry), Barbara Williams (Environmental Engineering), Frank Wilhelm (Limnology), and J. D. Wulforth (Rural Sociology).

Ten undergraduate students from across the USA participated in this program in the summer of 2008 and again in 2009. Each of the 10 students was assigned to a faculty member based on mutual research area interest. The student is then fully integrated into the faculty member's research group that includes undergraduate and graduate students and technical support personnel. The student and faculty member develop and sign a research agreement that defines the student's project, develops a timeline, and communicate expectations of the research project for both the student and the faculty member. Faculty encourage the student to present their findings at scientific meetings and even publish their research results.



Seven of the 10 Summer 2009 RUE participants at the University of Idaho.



Pacific Northwest Regional Water Quality Coordination Project Partners

Land Grant Universities

Alaska

Cooperative Extension Service
Contact Fred Sorensen:
907-786-6311

<http://www.uaf.edu/ces/water/>

University Publications:

<http://www.alaska.edu/uaf/ces/publications/>

Idaho

University of Idaho
Cooperative Extension System
Contact Bob Mahler: 208-885-7025

<http://www.uidaho.edu/wq/wqhome.html>

University Publications:

<http://info.ag.uidaho.edu/Catalog/catalog.htm>

Oregon

Oregon State University
Extension Service
Contact Mike Gamroth: 541-737-3316

<http://extension.oregonstate.edu/>

University Publications:

<http://extension.oregonstate.edu/catalog/>

Washington

Washington State University
WSU Extension
Contact Bob Simmons:
360-427-9670 ext. 690

<http://wawater.wsu.edu/>

University Publications:

<http://pubs.wsu.edu/>

Northwest Indian College
Contact Charlotte Clausing:
360-392-4319

cclausing@nwic.edu or

<http://www.nwic.edu/>

Water Resource Research Institutes

Water and Environmental Research
Center (Alaska)

<http://www.uaf.edu/water/>

Idaho Water Resources
Research Institute
<http://www.boise.uidaho.edu/>

Institute for Water and
Watersheds (Oregon)
<http://water.oregonstate.edu/>

State of Washington
Water Research Center
<http://www.swwrc.wsu.edu/>

Environmental Protection Agency

EPA, Region 10
The Pacific Northwest
<http://www.epa.gov/r10earth/>

Office of Research and Development,
Corvallis Laboratory
<http://www.epa.gov/wed/>

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The Project

Land Grant Universities, Water Research Institutes, and EPA Region 10 have formed a partnership to provide research and education to communities about protecting or restoring the quality of water resources. This partnership is being supported in part by the USDA's National Institute of Food and Agriculture (NIFA).

Our Goal and Approach

The goal of this Project is to provide leadership for water resources research, education, and outreach to help people, industry, and governments to prevent and solve current and emerging water quality and quantity problems. The approach to achieving this goal is for the Partners to develop a coordinated water quality effort based on, and strengthening, individual state programs.

Our Strengths

The Project promotes regional collaboration by acknowledging existing programs and successful efforts; assisting program gaps; identifying potential issues for cross-agency and private sector collaboration; and developing a clearinghouse of expertise and programs. In addition, the Project establishes or enhances partnerships with federal, state, and local environmental and water resource management agencies, such as by placing a University Liaison within the offices of EPA Region 10.

In addition to the specific research project the students are provided with several training activities including seminars on hypothesis-driven research planning, maintaining research records, critical thinking, responsible conduct of research, and preparation for graduate school. An Ethics-in Science component and a service learning activity also are used to broaden thinking and enhance activities of the enrolled students.

The 10 students come together several times a week for group participation in scholarly and recreational activities. These activities integrate the experience of students, build social and networking skills, while at the same time acclimating them to an academic research environment. Weekly research meetings and lunches with professional and academic role models, and weekend field trips led by faculty mentors, also contribute to the academic and social adhesion of the group.

Several of the students that participated in the summer 2009 program will be presenting scientific papers at upcoming professional meetings over the next 12 months. For example, Mr. Bradley Sliz (an undergraduate student from Eastern Illinois University) and Mr. Jonathan Megli (an undergraduate student from Southwest Baptist University in Missouri) will be presenting research papers at the National Water Resources Meeting in South Carolina in February 2010. Both Sliz and Megli worked in water research programs at the University of Idaho in the summer of 2009.

This program will be looking for 10 additional highly motivated undergraduate students for the summer 2010 program.

National Water Quality Program Areas

The four land grant universities in the Pacific Northwest have aligned our water resource Extension and research efforts with eight themes of the USDA's National Institute of Food and Agriculture.

1. Animal Waste Management
2. Drinking Water and Human Health
3. Environmental Restoration
4. Nutrient and Pesticide Management
5. Pollution Assessment and Prevention
6. Watershed Management
7. Water Conservation and Management
8. Water Policy and Economics

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