iUTAH Researchers Descend on Logan River during Water Sampling 'Blitz'

Thursday, Aug. 20, 2015

Utah State University doctoral student Michelle Barnes, a coordinator of iUTAH's sampling 'blitz' along the Logan River, collects flow data. The statewide project is aimed at study of the Utah's water resources.

Students Areg Haytayan, left, and Melissa Haeffner collect water samples from the Logan River in Logan Canyon for chemical analysis. The researchers were among participants in iUTAH's Cache Valley sampling 'blitz' Aug. 17-19.

Armed with measuring tape, flow meters and sampling bottles, interdisciplinary teams of students and faculty from Utah State University, the University of Utah and Brigham Young University embarked on a three-day trek covering some 20 miles along the Logan River from central Cache Valley to Franklin Basin.

The Aug. 17-19 effort was part of the busy summer schedule of iUTAH (innovative Urban Transitions and Aridregion Hydro-sustainability), a statewide project initiated in 2012 with a $20 million grant from the National Science Foundation. The multi-institution project is aimed at exploring how population growth, a changing climate and land use are affecting the state's water resources.

"Our researchers conducted synoptic sampling, which is essentially a science 'blitz' through the Logan River watershed to measure many water-related parameters," says Mark Brunson, iUTAH education, outreach and diversity director and professor in USU's Department of Environment and Society and the USU Ecology Center.

iUTAH teams completed similar sampling efforts during the past year, with more comprehensive studies this summer along the Logan River and Salt Lake City's Red Butte Creek.

"We'll use the data we collect from the Logan River watershed and those from the Red Butte study to begin identifying common watershed

characteristics and responses," says Bethany Neilson, associate professor in USU's Department of Civil and Environmental Engineering, who coordinated the Logan River watershed sampling project along with her doctoral student, Michelle Barnes.

Neilson says a goal of the study is to determine how ground water is interacting with the river system's surface water.

"People tend to look at a river like a pipe — as though it's isolated from the landscape surrounding it," she says. "But that's not the case. The river interacts continuously with ground water."

By measuring stream flow and a wide variety of chemical parameters, the researchers hope to get a better picture of where the water's coming from and where it's going.

In addition to flow, teams in the sampling effort measured water temperature, dissolved oxygen, pH, particulate matter, organic matter, isotopes, ions, nutrients and trace metals, while an additional team collected samples in search of *E. coli* and coliform bacteria.

iUTAH, which draws expertise from scientists, engineers and managers in a wide range of disciplines, has employed more than 60 undergraduate and graduate student researchers, with the undergrads' participation funded through its iFellows program. In addition, the five-year project recently instituted a pilot iUTAH Traineeship program to provide students with hands-on opportunities, such as the Logan River watershed sampling blitz, to gain water resource management skills in real-world projects.

"The iUTAH Traineeship program prepares students to enter the workforce ready to hit the ground running in such agencies as the Utah Department of Environmental Quality and the EPA," says Andy Leidolf, iUTAH assistant director and project administrator. "We've had an enthusiastic response from both faculty and agency managers, who are eager to provide learning opportunities for students."

Michelle Baker, professor in USU's Department of Biology and the USU Ecology Center, serves as iUTAH project director. She is featured speaker at the College of Science's Science Unwrapped public outreach program Friday, Nov. 6, during the program's fall 2015 *Bridging Troubled Waters* series. Science Unwrapped, which also has presentations scheduled for Sept. 11 and Oct. 6, is free and open to all ages. Presentations are held in the Eccles Science Learning Center Emert Auditorium on campus.

Related links:

iUTAH, Science for Utah's Water Future

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