

UWO receives \$1.1 million in grants from U.S. EPA

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<http://www.uwosh.edu/today/7148/uwo-gets-1-1-million-in-grants-from-u-s-epa/>

The U.S. Environmental Protection Agency (EPA) awarded four grants, totaling \$1.1 million, to fund an innovative study that brings together academic institutions, private corporations and local municipalities to research and evaluate Wisconsin beaches.

The three-year program, led by the University of Wisconsin Oshkosh, will include sanitary surveys along the entire Great Lakes shoreline of Wisconsin, multiple rapid testing facilities, and site assessments to determine pollutant sources and mitigation measures.

Leading the initiative is Greg Kleinheinz, associate dean for the College of Letters and Science and professor of environmental microbiology. In 2008, Kleinheinz said that 13 percent of Great Lakes beaches exceeded health standards, 90 percent of which were attributed to unknown pollution sources.

“We know there are contaminated beaches in Wisconsin, and there are federal laws that tell us how to monitor beaches and inform the public when there is a health risk. But there isn’t much that tells us how to identify the cause of pollution,” Kleinheinz said.

The goal of the project is to monitor Wisconsin’s beaches, quickly identify bacterial contamination and develop solutions to improve water quality.

Rapid test result facilities enable beach testing results within four hours, a capacity that is unprecedented anywhere in the country. These facilities use a process called Quantitative Polymerase Chain Reaction (qPCR), which uses DNA to detect bacteria instead of growing cultures.

“Testing that uses cultures takes a minimum of 18 hours. The funding will allow us to get quick results, close the beach if there is a health risk and figure out what is causing the contamination,” Kleinheinz said.

Developing a growing partnership with the private sector

The results of UW Oshkosh’s research will help private companies develop solutions that mitigate or solve contamination problems.

Miller Engineers & Scientists in Sheboygan will use the outcomes to engineer solutions that restore beaches and prevent contamination.

“We have worked with Greg and his students on a number of beach health projects in Wisconsin,” said Pete Pittner, vice president of Miller Engineers & Scientists. “Having the resources of the University and partnering with Greg puts us on the cutting edge of beach health initiatives. It has been good for our company, and it is great for the communities in Wisconsin.”

Providing invaluable opportunities for students

Ryan Bartell, a junior microbiology student at UW Oshkosh, worked on the shores of Lake Winnebago this summer to find correlations among environmental factors and bacterial contamination at the Menominee Park beach.

Bartell said he found E. coli present during two screenings, and the beach was closed until the contamination was cleared from the beach area.

“You never hope for contamination when you are conducting research,” Bartell said. “But on the other hand, I was glad I could find something that contributes to public safety.”

During the school year, Bartell continues his research and works in the Aquatic Research Laboratory on campus.

“I see daily changes in Wisconsin beaches, and I monitor the sources of contamination,” Bartell said. “I get to apply the lessons I learn in class and see real-life applications of microbiology.”

Over the course of the three-year project, Kleinheinz said he will employ 40 student workers to monitor beaches.

“This is a tremendous opportunity for students,” Kleinheinz said. “They get experience in the field and get to work directly with members of the community.”

Improving public health and safety

The overall goal of the beach grants is to protect beachgoers and provide communities with critical water quality information.

In one of the EPA grant announcements, Peter Silva, assistant administrator for EPA’s Office of Water, stated, “Protecting the beach-going public from illness is a national priority. EPA will continue to invest in this type of initiative.”

Kleinheinz said that lessening the time between collecting samples and closing beaches means less people could get sick, and Wisconsin is the only place you can get rapid beach testing.

“We have been working on these efforts to some degree since 2001,” Kleinheinz said. “These awards are a tribute to the students, staff and faculty who have worked so hard to improve the testing and quality of Wisconsin’s beaches.”

For more information about UW Oshkosh's biology and microbiology program, faculty and student research and EPA initiatives, visit:

- www.uwosh.edu/biology
- www.uwosh.edu/biology/faculty-research-projects
- www.epa.gov/region5/