University Researchers to Conduct Hunt for Explosives

By KATIE WILSON
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FAIRMONT — Researchers at **West Virginia University** are going on an explosive hunt.

The Bennett Department of Chemistry and the Forensic and Investigative Sciences Program at WVU are collaborating with the **West Virginia Water Research Institute** and WVU's Division of Plant and Soil Sciences to develop an approach for locating unexploded ordnance in the Monongahela National Forest.

According to the university, the **U.S. Army** used the forest as a training ground during World War II to prepare troops to fight in the mountains of Italy. Now, the research team has won a contract of more than $368,000 to use an environmental forensics approach to locating unexploded ordnance (UXO). The group will focus on the Dolly Sods Wilderness area of the forest in Randolph and Grant counties, located between Canaan Valley and Seneca Rocks. The Dolly Sods site is situated in heavily vegetated, rugged terrain with UXO potentially buried at various depths and consisting of various calibers.

Suzanne Bell, director WVU's Forensic and Investigative Science Program and assistant professor of chemistry, said they know there is UXO in the area, but the question is where and how much.

She noted the environmental approach will help researchers locate the UXO through compounds that may have leached into the soil as the material decomposes. Those compounds may be present in the soil and groundwater, and may have been absorbed by plants in the area. The research team will collect hundreds of soil, water and plant samples to complete the project.

"We want to learn everything we can about the soil," Bell said.

The project is being performed on a compressed time frame, she said. The final analysis must be completed by Dec. 31, so teams will collect hundreds of samples on trips this summer, then they will all be analyzed in the fall.

Bell said graduate and undergraduate students are helping with the project. For many of those students, this is the first time they will be able to see the processes they've learned about in class from the beginning to the end, Bell said. They will also learn to manage large groups of samples, she said.

"This is great because that's how labs work," Bell said. "They look at thousands of samples a week."

The research results will be used to design simplified and accurate methods of UXO removal for the **U.S. Army Corps of Engineers** and the **West Virginia Department of Environmental Protection** Division of Land Restoration. Bell said she hopes those groups will be able to use the processes created through the project to find UXO in other places.

The principal investigators for this project are Bell, **Louis McDonald**, associate professor in WVU's environmental soil chemistry division of plant and soil sciences, and **John Quaranta** and **Jen Fulton** of the Water Research Institute.

The project is funded by the **National Environmental Education and Training Center**.

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