

4-9-2010

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Recommended Citation

"Students Take Research to Congress" (2010). *News Releases*. 1207.
https://ecommons.udayton.edu/news_rls/1207

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Students Take Research to Congress

04.09.2010 | Students, Research

University of Dayton senior Elizabeth Gazdick and sophomore Allison Gansel have been working the past year with biology professor Eric Benbow to examine ecological conditions associated with Buruli ulcer, a skin-disfiguring disease that affects mostly children. The disease is prevalent in tropical areas, and while the mode of transmission is unknown, it has been linked to aquatic habitats.

The two undergraduates first worked together doing research in a campus lab and in Lawrence Woods State Nature Preserve in Hardin County, Ohio. They wanted to understand how water level fluctuations affect the formation of microbial communities, providing the ecological conditions for a hypothesized release of potential pathogens such as the bacterium that causes Buruli ulcer.

Gazdick then traveled to Ghana in August to replicate the study using a water source from a village where Buruli ulcer is regularly found. The results of their studies will help develop disease prevention plans.

The Council on Undergraduate Research invited Gazdick and Gansel to its annual "Posters on the Hill" conference in Washington, D.C. During the conference, the pair will exhibit their work and meet with members of Congress and federal funding agencies to explain their research and stress the importance of undergraduate research programs.

"Undergraduate research gives students the opportunity to experience and learn what real science is like," Gansel said. "Without external funding, a lot of smaller schools such as the University of Dayton wouldn't be able to financially support undergraduate research programs. I hope the Congressional representatives understand the importance of undergraduate research and support its continual growth."

In addition to conducting research in Ghana, Gazdick was responsible for educating the rural community about the disease, their research and how it can help in disease prevention and management. She also presented her research findings to scientists and healthcare professionals from American universities and several national and international institutions in Ghana, including the Ministry of Health.

"Traveling to West Africa was a life-changing experience," Gazdick said. "I was able to view how other cultures live; an experience that certainly made me more aware and empathetic toward those around me, both in our local and our global community. And professionally, I was able to develop and strengthen laboratory skills that are associated with designing and implementing a scientific experiment."

Benbow is among the lead researchers in the world studying the transmission of the Buruli ulcer into human populations. He recently returned from a World Health Organization summit in Geneva focused on the disease.

"No one really understands how this disease is spread to humans and why outbreaks occur in certain areas," he said. "But research like Elizabeth and Allison's is moving us toward a better understanding."

Gazdick and Gansel's research was supported by National Institutes of Health grants awarded to Benbow and a University of Dayton Sustainability, Energy and the Environment grant. Gazdick's research trip to Ghana was supported by the University of Dayton's Learn, Lead and Serve grant, which is awarded to students who want to pursue research related to their academic field that will also benefit the community around them.

"This is a great example of how primary, NIH-supported research can be complemented by University of Dayton internal support for undergraduate students that ultimately gets to the national level of recognition," Benbow said.

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