

GRO Forum

Greater Research Opportunities Undergraduate Student Fellowships



Where are they now?

Catching up with GRO Fellows

DECEMBER 2015

Serina Robinson

"I grew up in South Dakota in a farmland-owning family so my first interest in the environment came from my rural surroundings and seeing the effects of industrial agriculture on ecosystems of my childhood," says Serina Robinson, a 2013 Greater Research Opportunities Fellow and graduate of St. Olaf College, Northfield, Minn. Serina was always interested in biology and chemistry (one of her two college majors), but thanks in part to the GRO Fellowship has focused her academic career on microbiology. "The fellowship was critical for funding years of research experience that helped me hone my interests and apply for a Ph.D. program in microbiology," she says.

Before beginning her doctoral studies in the microbiology, immunology and cancer biology program at the University of Minnesota, Minneapolis,

Minn., Serina will put her undergraduate major in Norwegian to good use as a Fulbright Scholar at the Arctic University in Tromsø, Norway. She'll study the effects of warming Arctic temperatures due to climate change on methane-oxidizing bacteria. Her work uses bioinformatics, an interdisciplinary field that develops methods and software tools for understanding biological data, to study changes in bacterial protein and microbial RNA expression under different temperature conditions.

"This research will improve understanding of how alterations in the metabolism of these bacteria due to climate change will affect the global carbon budget and the health of Arctic ecosystems," Serina explains. The global climate budget is an examination of carbon cycle sources and sinks on a global level. The carbon cycle describes the

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Serina Robinson (continued)

movement of carbon as it is recycled and reused throughout the global ecological system called the biosphere.

In addition to being a Fulbright Scholar, Serina is the recipient of a National Science Foundation Graduate Research Fellowship for her doctoral work. Her research will focus on the use of computational approaches to study the human microbiome – the collection of microbes living on and in the human body – and its connection to disease. Serina credits the GRO Fellowship for helping her compete for the Fulbright and NSF graduate fellowships, “Thank you EPA GRO Fellowship for funding my research experience and passion,” she says. “The Fellowship gave me a leg up for these awards!”

Serina also calls the GRO Fellowship, particularly the internship, “an exceptional chance as an undergraduate to delve into environmental research with EPA.” She broadened her research experience during her internship in an ecotoxicology lab at the Mid-Continent Ecology Division, Duluth, Minn., where she studied fish instead of microbes. “I gained appreciation for the daunting challenges faced by scientists who identify, test and prove the dangers of chemicals in our environment,” Serina says. The internship helped her understand the complexities and challenges associated with translating scientific data into policy and regulation. “I’m excited to someday contribute and play my own small role as an environmental scientist,” she says.

Internship Reflections 2015: GRO Fellows share their thoughts on their summer internship experiences

*About her internship at the Atlantic Ecology Division, Narragansett, R.I., **Jennifer Bailey** says, “I believe that my time here has given me the skills, both academic and professional, necessary for my success in graduate school. This was an incredible experience and I would definitely recommend it to anyone interested in toxicology.” Jennifer is a biology major at Norfolk State University, Norfolk, Va.*

*“My project proved to be an incredible learning opportunity that provided me with a tremendous amount of guidance and insight into EPA and my future goals,” says **Ashley Funk**, an environmental studies major at Wellesley College, Wellesley, Mass. Her internship in Region 5, Chicago, Ill., on sustainable water infrastructure and green infrastructure solidified her interest in empowering rural communities. “My project gave me insight into how I may continue to do that work in the professional world,” she says. **Makari Krause**,*

who studies environment and economic politics at Claremont McKenna College, Claremont, Calif., learned about mobile sources and carbon pollution during his internship in San Francisco, Calif. “Some of the most important lessons that I learned this summer were the technical skills used to manipulate data and the conceptual skills of utilizing data to have a greater impact on the world,” he says.

*"I had not had very much microbiology lab experience before coming to EPA, so most of the techniques that I learned were new to me," says **Zev Greenberg** about his internship at the Ecosystems Research Division, Athens, Ga. Zev, a chemistry, biochemistry and molecular biology major at Dickinson College, Carlisle, Pa., expects to apply the lab techniques he learned while working in a developmental biology lab.*

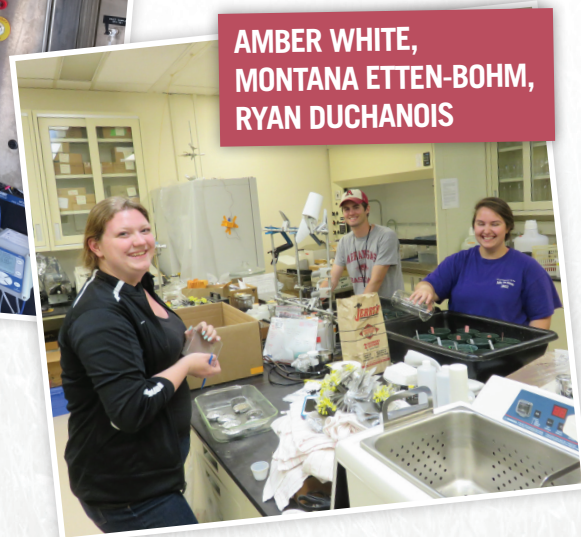
***Trevor Dunn** reports that he acquired a wide array of new skills in areas including laboratory procedures, equipment use and field sampling during his internship at the Region 3 lab in Wheeling, W.V. He also refined his existing skills. "Even though I had a fair amount of experience in the field prior to starting my internship, I was able to solidify many of my previous skills through applying them in the field this summer," says Trevor, a fisheries and wildlife management major at Lake Superior State University, Sault Ste. Marie, Mich.*

***Sederra Ross** has studied chemistry, physics, aerospace and engineering but chose to take on a new challenge, learning about environmental justice in her internship in Region 4, Atlanta, Ga. "This summer I learned about the ideas that cannot be learned in books and research labs. I learned about people, passion, drive, teamwork, leadership, equality, justice and underserved communities," she says. Sederra, a chemistry major at Clark Atlanta University, says that her internship experience has broad relevance: "The knowledge I gained and skills I learned during this internship will help me be a better college student and a better student leader."*

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