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Ruth K. Varner, Associate Professor, Earth Systems Research Center

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Inquiry Journal

Undergraduate Research Journal : Spring 2013

Mentor Highlights

Ruth Varner

—Brigid C. Casellini

Ruth K. Varner is a research associate professor in the Earth Systems Research Center at the University of New Hampshire. She is jointly appointed in the Department of Earth Sciences and in the Institute for the Study of Earth, Oceans, and Space. Professor Varner completed her master's and doctoral degrees in earth sciences at UNH and has been a faculty member since 2003.

Below is a correspondence with Professor Varner about her own research and her mentoring experiences with undergraduate students.

Inquiry: What is your current research? Did your undergraduate studies point you toward it? What interests you most about it?

RV: My research area is greenhouse gas emissions from both natural and managed ecosystems. I was a geology major as an undergraduate and was really interested in how humans impact our world. I like solving problems. How to make a measurement and what the data mean are integral to my work and the most interesting to me.

Inquiry: What is the purpose of a mentoring relationship? What should the student and you gain from it?

RV: Mentoring to me is about offering students the opportunity to try something new, to learn about themselves, and to challenge their limits. The student should gain confidence, an understanding of their strengths and weaknesses, and a better idea of where they see themselves in five to ten years.

As the mentor, I gain a tremendous amount: I learn how to communicate my research and science, build relationships and a network of colleagues that last a lifetime, and support my research program.

Inquiry: Please describe one or two memorable mentoring experiences or mentees.

RV: There have been many memorable moments in the past twenty years that I have been mentoring. One of the most memorable was in 2012, when Jackie Amante and I were in northern Sweden setting up her research site for her International Research Opportunities Program (IROP) project. As part of her research she was helping a graduate student from Stockholm University take samples. His instruments were installed in the lakes at the site so Jackie was required to row to collect samples. We were struggling with rowing an inflatable boat against a strong wind and ended up in the weeds. Even I as the mentor was having a hard time getting the boat where we needed it to go. This moment was a bonding experience that Jackie and I won't soon forget. We were exhausted and cold and just sat and laughed at a certain point, then went on with our problem solving to figure out how to get ourselves out of the weeds.

Inquiry: Please describe any difficulties or problems you have had in mentoring undergraduates.

RV: I think the greatest challenge for many of us is that we assume our students are all alike. Undergraduates have



Ruth Varner (left) and Jackie Amante

the interest and enthusiasm but often need to be brought back down to reality; to be told what they can actually expect to accomplish in a ten-week project for example. They also often need more coaching, training and time than is required by a graduate student. This is why I recommend a cascade-type mentoring approach where you build a group of researchers that go from least experienced to most experienced, so that the students have the opportunity to work with a variety of people who bring a breadth of experiences. That is why I have post-docs, doctorate students, graduate students, and undergraduates all working together on projects and in my lab.

Inquiry: What advice or tips would you give a faculty member new to undergraduate mentoring?

RV: Be patient, give your time, and ask others to help. I have been asked before if doing research with undergraduates is helpful to my research program, and I answer without hesitation "Yes." You just need to know that things may often take longer than you expected, but that the results can be amazing!

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