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Faculty Spotlight:

Steven Goldsmith, PhD, Assistant Professor of Environmental Science

This interview series brings you inside the world of Villanova's faculty and explore how their work relates to creating a sustainable future. In this issue, we hear from Dr. Steven Goldsmith, an assistant professor in the department of Geography and the Environment.

What is your academic background?

I double majored in Geology and Environmental Studies at Ohio Wesleyan University. Upon graduation, I moved to the New York City area where I worked in environmental consulting for seven years before returning to graduate school. I obtained both my Masters and PhD degrees in Geological Sciences from The Ohio State University. I like to draw upon both my academic and professional experiences in the classroom and in my research.



How long have you been teaching at Villanova?

I'm currently in my fifth year of teaching at Villanova.

In your own words, how would you define sustainability and why is it important to you?

My definition of sustainability has definitely evolved over time. Currently, I relate most with 'using our shared resources in an ethically and environmentally responsible manner to ensure their viability for generations to come.'

I grew up in a blue collar household with a father who worked as a typesetter for a rubber stamp manufacturing company. Every day he would return home with his hands covered with a layer of metal dust, some of which contained lead. Needless to say this had an impact on both his long-term well-being as well as my own health growing up. I think there are a couple of important lessons to be learned from this experience. First, we are constantly striving to understand how materials used in our everyday life can have an impact on both human health and the environment. When in doubt, the answer might be to look to the natural system for viable alternatives. Second, there is a critical need for education on the environmental health impacts of what can be deemed "generally accepted practices," including drawing awareness to environmental issues affecting more vulnerable populations. I think the current water crisis in Flint, Michigan provides a poignant modern day example of these concerns.



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What is your current research focus?

My research is primarily focused on linking land practices to water quality. I'm currently working with colleagues to investigate the impact of historical agricultural practices on near shore coral reefs in Puerto Rico, thanks to funding from the National Fish and Wildlife Federation. More locally I am part of a team that is investigating the antimicrobial agent triclosan in a southeastern Pennsylvania watershed, through funding from the Pennsylvania Sea Grant. I'm also actively researching topics ranging from the impacts of suburbia (i.e., lawns, road salts, septic systems and leach fields, etc.) as well as hydraulic fracturing activities on Pennsylvania streams and groundwater quality.

Do you collaborate with others for your research?

Yes! Collaborations are both an essential and very rewarding aspect of my research. I'm currently collaborating with Dr. Lisa Rodrigues and Dr. Stephen Levas in my own department on the coral reef project, as well as Dr. Amanda Grannas in the Department of Chemistry on the triclosan work. I also collaborate with local non-governmental organizations focused on watershed protection, such as the Lower Merion Conservancy and the Guardians of the Brandywine. I find that these interdisciplinary collaborations not only challenge you to think outside of your comfort zone but also provide students with valuable examples of how a community centered approach is critical to solving complex problems.

Do you incorporate sustainability into the courses you teach?

Yes. I'm currently teaching an upper level lab course titled Watershed Biogeochemistry. As part of the semester long lab portion of the course, students are divided into three groups, each tasked with identifying impacts to their designated local watershed, developing a sampling plan, collecting and analyzing their samples, and presenting their results to both non-governmental organizations as well as private entities (i.e., Victory Brewing) who are actively involved in watershed preservation. I'm looking forward to this semester's presentations!

If you could create one course out of thin air, what would it be?

I would love to have the opportunity to team teach a multi-disciplinary watershed-based course with a focus on developing countries, perhaps with a field component over spring break. I think it would be extremely important for students to witness firsthand how water quality issues are magnified outside of the developed world and the challenges they will face as a collective society going forward.

What are your favorite outside of the office activities?

Anything that keeps me outside. I'm currently training for my second marathon and hope to complete the Philly distance trifecta this year (Broad Street Run, half marathon, and marathon). I'm also a big live music aficionado. I've seen both Neil Young and Bruce Springsteen way too many times to count.