

Faculty/Staff [SPOTLIGHT]



Dr. Jennifer Sklarew. Photo by Creative Services/George Mason University

Dr. Jennifer Sklarew, an adjunct Professor in the Department of Environmental Science and Policy, has been teaching at Mason for seven years. After obtaining her PhD at Mason, Sklarew continued to support the field of renewable energy through numerous research projects at her alma mater.

Sklarew's current research focuses on institutional influence on transitions in and development of energy systems. Sklarew has interest in how energy systems and water systems interact, and how integration of these processes can be implemented. "There are communities in India, Africa, and Central and South Asia where instead of choosing between energy access and clean drinking water, (they) could develop integrated systems," Sklarew explained.

Most recently, Sklarew has been spearheading a project to integrate micro-turbines into Mason's water system that explores "the interdependencies between the systems," pairing electricity access with water access. Through this research, Sklarew came across a pilot project in Portland that installed micro-turbines in existing pipe infrastructure used to transport drinking water. These micro-turbines produced clean, renewable electricity.

In the Fall of 2015, Sklarew began discussions with other faculty members to bring a similar project to Mason's Fairfax campus. Micro-turbines installed in the water pipes would produce electricity to power small applications.

"Using small scale applications such as cell phone charging kiosks and street lamps will make these systems replicable in other places," Sklarew said. These independent energy generators would enable local communities to have more control over their energy systems.

In the infancy of this project, Sklarew began to look into how to involve students in the micro-turbine project. "Many departments were interested in designing and implementing micro-turbines. The project includes fields from ecology, geology, socio-economic, physics, sustainability, global affairs, and many others," Sklarew said.

Dr. Sklarew hopes to involve SURE students in the short and long term goals of this project. To that end she began discussions with GMU STEM Undergraduates for Renewable Energy (SURE) in May of 2017. GMU SURE is a multi-disciplinary Registered Student Organization that allows students of diverse interests to have a place in the renewable energy discussion. Nathan Moravitz, President of GMU SURE, said "(the project) allows STEM majors and opportunity to learn STEM skills and gives traditionally STEM majors an opportunity to expand their understanding into other areas, like marketing, economics, and global affairs." Students will help to design and install these micro-turbines, but also participate in alleviating institutional barriers and building community surrounding renewable energy. "I want the students to have institutional memory so that they can educate the next group of students about the operation and maintenance of this project. New students can even refine the design as new ideas come in," Sklarew said.

"Our relationship has just begun, but will be fully realized as we continue to work on the Micro-Turbine project," Moravitz said. Sklarew encourages students to engage with faculty and bring their own experiences to sustainability. She also emphasized that all disciplines have a valuable voice within discussions on renewable energy. She concluded, "Start to collaborate here with students and professors and take that collaboration with you when you leave. Then you will have successful application of your ideas."