

Center for Watershed Research and Service

Fall 2015
Newsletter

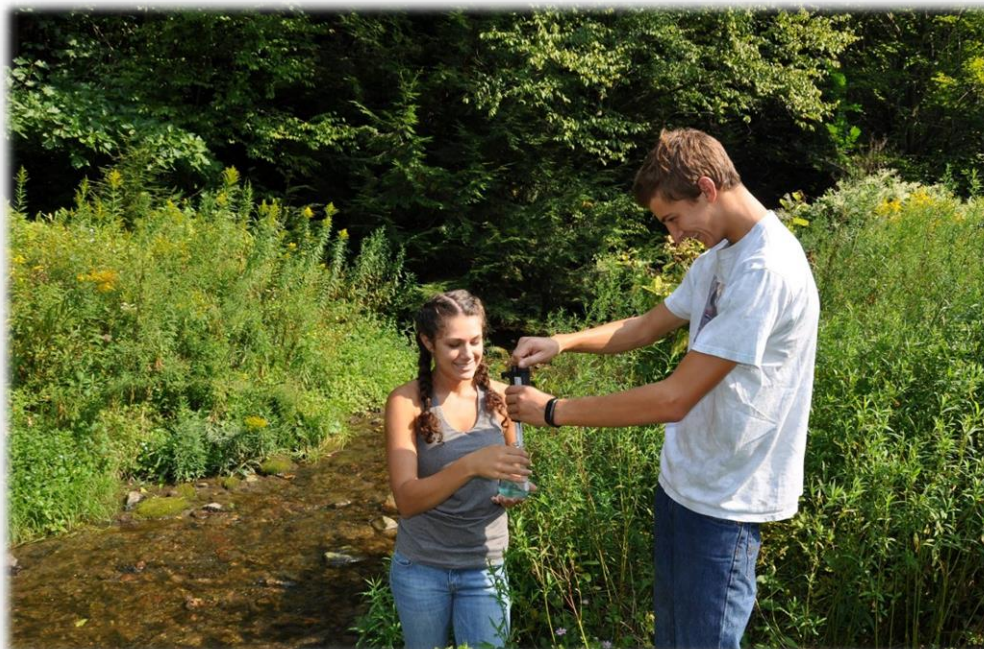


Our Mission

The mission of the Center for Watershed Research and Service is to provide expert assistance and manpower to amplify the watershed restoration efforts of domestic and international nonprofit organizations and to advance the watershed restoration body of knowledge. Our projects range from simple road clean-ups and tree plantings to complex engineering trouble-shooting and design. We also help to match nonprofit partners in need of technical assistance with faculty and students from various academic schools and degree programs at Saint Francis University.



The Environmental Engineering Field Measurements class has been working on sampling Bradley Run, a stream near Gallitzin, PA, which is not only impacted by acid mine drainage (AMD) but also poorly treated municipal waste water (MMW). These two discharges are only several feet apart and enter the stream on opposing banks. This makes for a fascinating and unique situation known as co-treatment. This simply means that as the MMW and AMD mix with each other traveling downstream, they may treat each other to an extent, instead of magnifying the negative effects that either of these types of discharges can have on a stream. The students get to experience a real-time in-situ example of this type of phenomenon. The main goal of sampling Bradley Run is to see the extent to which co-treatment is happening. This is done by taking field measurements such as pH and dissolved oxygen, along with gathering samples to be taken back to our labs at SFU to be analyzed for several significant water quality parameters, such as iron, manganese, aluminum and sulfate concentration.



INSIDE THIS ISSUE

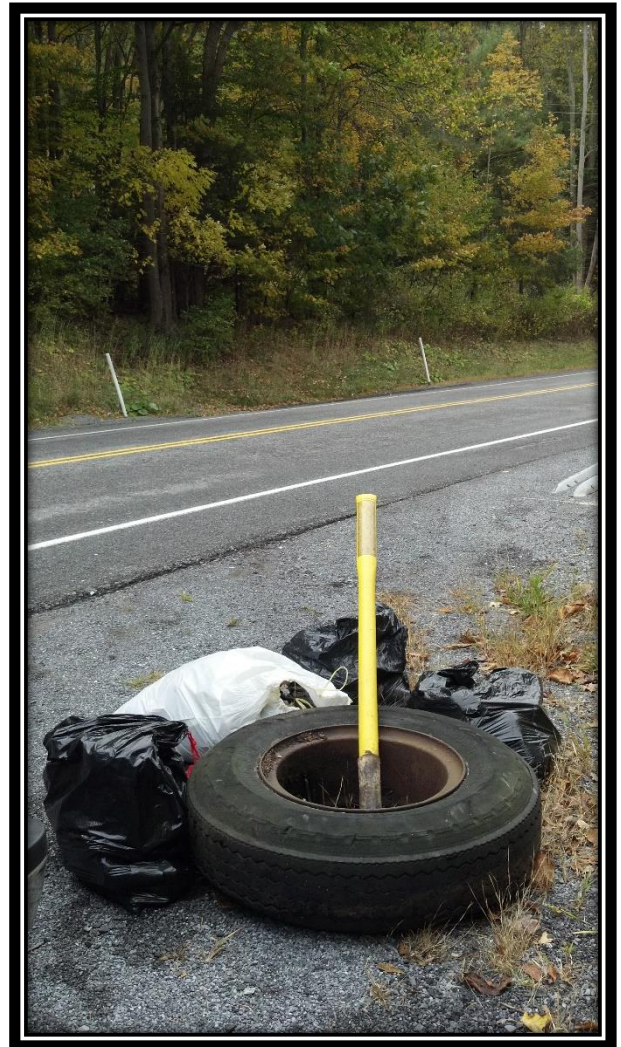
- Community Service Projects 2
- Community Partner Spotlight 3
- Faculty and Student Spotlight 4

Community Service Projects

Clearfield Creek Clean Up by Sawyer Rensal & Maria Messina



Between Dysart and Ashville, PA the leaves of hardwoods are changing. The trees catch the attention of drivers on Route 53 and divert their eyes from the hundreds of pounds of trash along the banks of the road, some just ten yards away from the Clearfield Creek. On Sunday, September 27, 2015 nine students from Saint Francis University volunteered with the Center for Watershed Research and Service to assist the Clearfield Creek Watershed Association (CCWA) with their last quarterly roadside clean-up of the year. The students spent two to three hours picking up drywall, metal, cigarette butts, bottles, cans, wrappers, Styrofoam, a cooler lid, and a tire over a span of three miles along the road. CCWA provided safety vests, leather gloves, and garbage bags. One might think that a clean-up is a rather easy task, but when the banks along the road are near sixty degrees steep, well, it doesn't take a physicist to know it would take a lot of energy to go down and up ten feet a good many times in a mile stretch, let alone when you have to roll a 200-pound tire up twenty feet on the same incline. The effort started nine o'clock in the morning and lasted until lunchtime. All considered, the volunteers were grateful to have had the opportunity to help CCWA, enjoy the changing of the colors, and make Pennsylvania a little more beautiful.



Community Partners Spotlight



Engineers in Action



Our partner organization, **Engineers in Action**, just secured a \$33,055 grant from the United Methodist Committee on Relief. The funds are for work to restore the Juckucha River in Bolivia so impoverished farmers can safely use it for irrigation. This will be the first time in over a century the farmers will have clean water to use for farming! The grant also supports Dr. William Strosnider along with a team from BioMost Inc. to work on the project in Bolivia during the Fall 2015 semester.

Faculty and Student Spotlight

Dr. Rachel Wagner



Dr. Rachel Wagner joined the Environmental Engineering department in 2013. She teaches courses such as Aquatic and Atmospheric Chemistry, Laboratory Environmental Measurements, and a freshman seminar incorporating GIS with Environmental Justice. Her research focuses on biotechnological solutions to environmental problems, particularly investigating microbial fuel cells and similar technologies.

Jessica Mazzur



Sophomore environmental engineering major, Jessica Mazzur, presented her research on the "Effectiveness of MCS as a Power Source using a Joule Thief Circuit" at the International Society for Microbiological Electrochemistry and Technology 2015 conference at Arizona State University earlier this month. Jess was accompanied by her research advisor, Dr. Rachel Wagner.

The Saint Francis University [Center for Watershed Research & Service](#) has been designated as an approved provider within the [National Fish and Wildlife Foundation](#) Technical Capacity program. This designation will allow the University to apply its unique model of professor-student technical service-learning to help local governments, nonprofit organizations, and conservation districts. Within the model, professors work with small teams of undergraduates on real class projects with real clients. Students also work outside the classroom as interns with the Center's partners during the semester as well as in the summer to achieve a research or technical service goal. Under the program, Saint Francis University would be eligible to apply for project grants through the Technical Capacity Grants Program funded by the U.S. Environmental Protection Agency. The goal of the program is to more efficiently restore the habitat and water quality of the Chesapeake Bay and its tributaries.

"The Center is excited about the new possibilities that this designation provides," said Bill Strosnider, director of the Center for Watershed Research & Service and associate professor of [environmental engineering](#) at Saint Francis. "We see new opportunities for our students and faculty to serve our surrounding communities." "The Saint Francis University Center for Watershed Research & Service is staffed by a diverse team of faculty who specialize in environmental engineering, chemistry, biology, history, and communications. The cross-discipline team reflects the multi-faceted nature

The Center for Watershed Research and Service Directors:

Dr. William Strosnider, Director
 Dr. Joel Bandstra, Associate Director
 Dr. Denise Damico, Associate Director
 Ms. Kelsea Palmer, Associate Director

For more information, please contact Dr. William Strosnider at 814-471-1144 or wstrosnider@francis.edu

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