SIUE research seeks effective solutions for storm water runoff

by Megan Weiser
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EDWARDSVILLE - The Illinois Department of Transportation (IDOT) has called on the expertise of Southern Illinois University Edwardsville engineering scholars to find cost-effective solutions that meet regulations from the Environmental Protection Agency (EPA) to retain one-inch storm water highway runoff.

Multiple SIUE School of Engineering faculty and students are collaborating with IDOT through a multi-year grant totaling more than $230,000 to conduct research, entitled, “Effective Post-Construction Best Management Practices to Infiltrate and Retain Storm Water Run-Off.” It is led by principal investigator (PI) Abdolreza Osouli, PhD, P.E., assistant professor in the SIUE School of Engineering Department of Civil Engineering.

“The potential outcomes of this research will aid in sustaining the storm water collection system by not overloading it,” Osouli explained. “The project has offered a unique experiential learning opportunity for SIUE engineering students as they have been involved from A to Z of design, construction, test runs, interpretation of data and writing reports.”

Other School of Engineering faculty who have been involved in the project include Jianpeng Zhou, PhD, co-PI of phase one, and Mark Grinter, P.L.S., co-PI of phase two. Master’s candidates Sina Nassiri and Sudesh Thapa have also played an integral role in the research.

Azadeh Akhavan Bloorchain, a doctoral candidate in the SIUE School of Engineering Cooperative PhD Program in Engineering Science, has contributed to the project for approximately three years. She says the project has further intensified her interest in water resources.

“Joining Dr. Osouli’s team during my doctoral studies has given me the opportunity to work more and improve my knowledge and skills regarding best management practices (BMPs),” Akhavan Bloorchain said. “If a storm water collection system becomes overloaded, it will get clogged and the system will fail to achieve the designed goal. Restoration typically requires rebuilding the system with its own cost. Findings from this study can benefit engineers and decision makers with a BMP maintenance plan.”

SIUE’s expansive landscape has been especially conducive to the work of the researchers during their construction and ongoing test runs.

The SIUE School of Engineering offers one of the most comprehensive and affordable engineering programs in the St. Louis region with eight undergraduate degrees, five master’s degrees and two cooperative doctoral programs, all housed in a state-of-the-art facility. Students learn from expert faculty, perform cutting-edge research, and participate in intercollegiate design competitions. Companies in the metropolitan St. Louis area provide students challenging internships and co-op opportunities, which often turn into permanent employment. All undergraduate programs are accredited by their respective accreditation agencies.