SIUE Engineering camp teaches societal impact through interactive activities
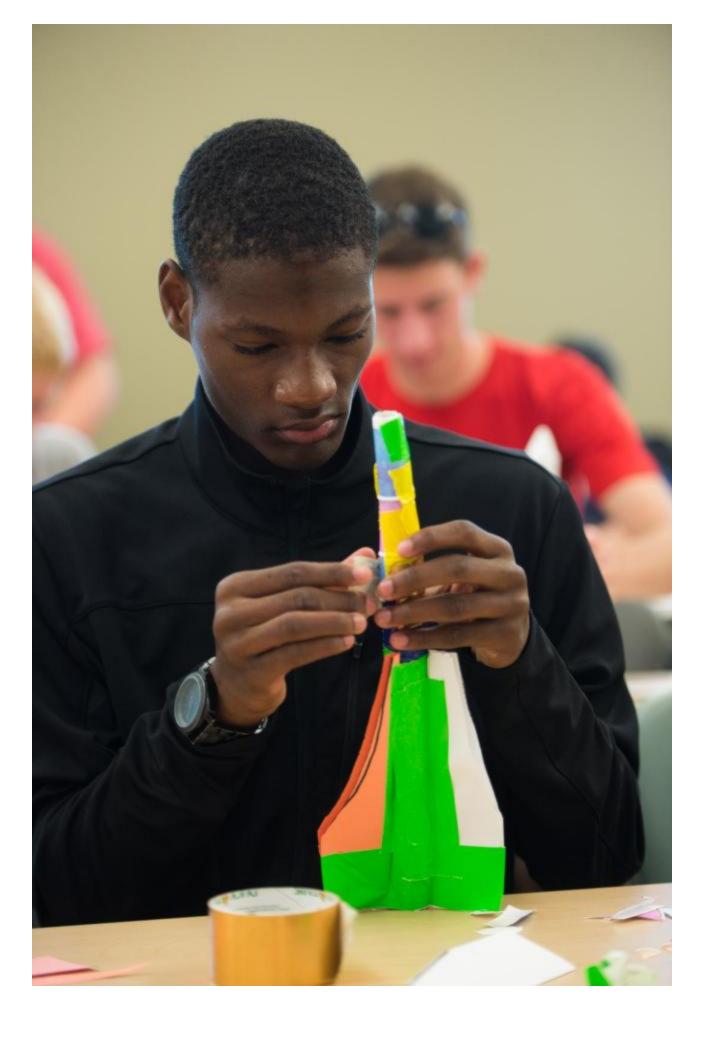
June 15 2017 2:22 PM

EDWARDSVILLE - Sixty high school students attending Southern Illinois University Edwardsville's Engineering Camp are learning how engineering impacts society. They're participating in a variety of interactive experiments, design projects and field trips.

"The things I like most about engineering are the hands-on part and the drawing part," said Christopher Robinson, of St. Louis.

"You can be creative, and you can solve problems," added Grace Miller, of Carrollton.

"When you overcome a challenge, it's exciting," emphasized Jamaine Owens, of East St. Louis. "It's fun having a sense of accomplishment."

The hands-on projects include building and programming robots, designing a water filtration system, mixing concrete, gliding on a hovercraft and more.

"Our campers bring incredible gusto and creativity to the camp, and we genuinely feed off that energy," said Chris Gordon, PhD, associate dean in the SIUE School of Engineering. "Each camp is a unique, fun experience."

Engineering Camp is sponsored by Phillips 66 Wood River Refinery, with additional support from MiTek and the Illinois Professional Land Surveyors Association.

Eleven campers also participated in a new daylong survey track that explored land, engineering, construction and hydrographic surveying, using SIUE's expansive landscape.

"The profession isn't widely understood, so we're trying to introduce young people to those concepts," said Mark Grinter, PLS, associate professor and chair of the Department of Construction Management. "We've got this big campus with lots of different environments that allow us to do field exercises, including the prairie, lake, central core and woods."

Volunteers from the Illinois Department of Transportation demonstrated their field crew techniques with a robotic station and a digital level, and students used surveyor controls to run construction equipment.

Under the leadership of the Madison County Soil and Water District, they also did hydrographic surveying where they determined the depth of Cougar Lake using a robotic controlled boat that receives a GPS signal. Campers also worked with an Unmanned Aerial Vehicle to conduct aerial surveying.

"I enjoyed learning about soil erosion, how it's affecting the depth of the lake and what it's doing to the crop environment around the lake," Miller said.

SIUE engineering students mentor the participating students and help them get a taste of campus life.

"I thought this was a great opportunity to work with the young generation of engineers and kind of show them what engineering is like," said Franklyn Hernandez, a junior majoring in electrical engineering.

"We give them things to figure out, and it's interesting to see how their gears start clicking and how they overcome the problem," added Rebecca Fowler, a junior majoring in civil engineering.

Along with fostering overall interest in engineering, the camp attracts students to the high-quality programming and opportunities for growth offered by the SIUE School of Engineering.

"We see a number of participants who come back after the summer camp," said Gordon. "They have a great experience on campus, working with our faculty and in our labs. They get to test out their designs and see their creativity and innovation in action. They get a sense of the opportunity at SIUE."

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.