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[Energy grant provides Effingham school opportunity to study smart home technology](#)

December 21, 2020

What does a teenager know about energy usage and costs in their homes?

That is one of the questions that Georgia Southern University's Kania Greer, Ed.D., will ask local students with a new grant-funded program in Effingham County. Greer, coordinator of the College of Education's Institute for Interdisciplinary STEM Education (i²STEM^e) was recently awarded a \$30,000 grant from energy company Constellation, an Exelon company, for a partnership with the Effingham College and Career Academy and the Effingham County Schools STEM Program.

The project, called Engaging Students in Engineering Education (E-SEE), will bring the curriculum to over 200 students in Effingham County through the lens of smart home devices.

"Smart devices are all around us," said Greer. "More and more students are utilizing this technology daily to access different aspects of their lives. However, not many students realize how many smart devices are in their home. From simple to complex, these devices can have an impact on energy usage — from regulating temperature to turning off lights."

For the next few months, Greer and co-principal investigator Rami Haddad, Ph.D., associate professor of electrical engineering at Georgia Southern, in partnership with Effingham County teachers, will develop a curriculum for high school students to experiment with varying smart home technology. They will examine four critical areas including energy, electricity, engineering and environment.

"Small groups of freshmen, sophomore and junior students will be given a Smart Home Learning Kit, which will allow them to develop and explore a variety of applications and hardware," said Greer. "We want all students participating in this project to discover how this technology works, if it is effective, how much energy is it saving and what impact it has on the environment."

Effingham County seniors will select a smart home device, ranging from smart plugs, automatic bowl flushers and smart switches, and install one in their home to monitor and determine its real-world impact.

"How many times have you heard your parents say to turn off the lights or not to touch the thermostat because of their power bills?" asked Greer. "Beyond the educational implications and hands-on learning this program will provide, we are asking students to become familiar with financial considerations of energy efficiency as well."

Two Effingham County teachers, Michelle Thompson, Ed.D., director of scientific research, and Aaron Specht, director of engineering, have been selected to implement E-SEE in fall 2021. They will collaborate with Georgia Southern faculty and staff to implement the 16-week smart home technology program.

"I am excited to expand our partnership with Effingham County Schools and offer students an opportunity to design research projects they are interested in and can become invested to continue on their own," said Greer.

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