Georgia Southern professors mentor students at Boys and Girls Club of Statesboro, enhance STEM literacy with weeklong study

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Georgia Southern University College of Education (COE) faculty members Shelli Casler-Failing, Ph.D., and Alma Stevenson, Ph.D., worked with students at the Boys and Girls Club of Statesboro this summer to enhance their STEM literacy skills.

From July 8 through 12, Casler-Failing and Stevenson spent four hours daily implementing an in-depth science unit on water quality with rising fourth- through seventh-grade students. Using water samples from Georgia Southern’s Eagle Creek, local fishing ponds and multiple Statesboro-area tap water sources, the COE faculty provided students with opportunities to test water samples, understand the water cycle and discuss the effects of pollution.

“The water samples were from sources they swim in, fish in and drink from,” said Casler-Failing. “So they became invested in knowing more.”

At the core of the program was culturally responsive instruction, which identifies and nurtures the strengths of each student’s cultural uniqueness.

“We designed a literacy in STEM program where the students’ cultures and experiential backgrounds were placed at the center of the curriculum,” said Stevenson. “Using culturally relevant, enabling literature allows students to make connections with their lives and with positive role models.”

At the end of the week, students worked in pairs to create and record a newscast demonstrating their understanding of the water cycle and environmental effects on water quality.

“The students really enjoyed it and were very engaged,” said Casler-Failing. “They grew interested in finding out what was inside the surface water, and we felt like it was a successful experience.”

The one-week intensive study of water quality stemmed from a previous project that Casler-Failing, Stevenson, and COE colleague Beverly Miller, Ph.D., completed with the Boys and Girls Club in the spring. Funded by a Georgia Southern service grant, the project was a 10-week, after-school program that utilized picture books and graphic novels to bridge students’ understandings of scientific and mathematical concepts.

Both Casler-Failing and Stevenson are former classroom educators, so the opportunity to return to working with young students was an easy choice.

“We were always excited about the next day when we would work with the students,” said Stevenson. “As a professor preparing the next generation of teachers, this was a learning experience for us. We gained skills and strategies that we can take back to our pre-service teachers.”

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