

College of Education News

August 27, 2012

Georgia Southern University

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Recommended Citation

Georgia Southern University, "College of Education News" (2012). *Education, College of - News*. 72.
<https://digitalcommons.georgiasouthern.edu/coe-news/72>

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Georgia Southern STEM Institute to Focus on Needs of Rural Southeast Georgia

August 27, 2012



Georgia Southern University has established a new institute for interdisciplinary STEM (Science, Technology, Engineering and Math) Education, named i²STEM^e, that will support thematic grant writing, research and outreach. The Institute is committed to excellence in primary, secondary and higher education STEM teaching and learning with a focus on the rural and diverse populations under-represented in STEM areas in southeast Georgia.

COE was a key player in the initial phases of designing the institute along with administrators from the College of Science and Math (COSM) and the Allen E. Paulson College of Science and Technology (CEIT). "It is our belief that any interdisciplinary STEM initiative must be informed by cutting-edge educational practice," said Dr. Thomas Koballa, COE Dean. COE's role in the institute, in addition to the other core partners – COSM, CEIT and the College of Liberal Arts and Social Sciences – creates a unique institute and the only one in Georgia that brings together an interdisciplinary collaboration to address and integrate all four facets of STEM curriculum while utilizing frontline research and educational practice.

"Georgia Southern University is not only committed to increasing the numbers of those entering STEM fields, but also to creating an environment where our citizens are more STEM literate and can make informed decisions about complex issues," said Georgia Southern President Brooks Keel, Ph.D. The announcement comes on the heels of a White House initiative to create a new national STEM Master Teacher Corps and a focus on increased funding that allows school districts to identify, develop and leverage highly effective STEM teachers.

"This new institute will not only support a strategic and important national initiative, but it will position Georgia Southern to play an important role as we work to inspire Georgia's best and brightest K-12 students to pursue STEM careers," Keel said.

Heading up the institute is COE's Dr. Robert Mayes who came to COE in 2011 to conduct research on quantitative reasoning in STEM and spearheaded, through Georgia Southern's Office of Research, the first International STEM Research Symposium on Quantitative Reasoning in Mathematics and Science Education, held in 2012 in Savannah. Last March, COE and the Allen E. Paulson College of Science and Technology held the 1st Annual Georgia Scholarship of STEM Teaching and Learning Conference. Plans are underway for a second conference to be held March 8, 2013.

As an educator, Mayes believes STEM should be incorporated into every subject. "We need to teach STEM subjects from an interdisciplinary, problem-based perspective," he said, which means incorporating quantitative reasoning as an integral part of the discussion. This approach engages students. "We want to get kids to use their experiences to excite them about science and math," he said. This keeps them interested and informed, and more adept at using quantitative reasoning in all aspects of their lives. The result will be more scientifically literate children and by extension, more

globally aware citizens, Mayes said, who will be able to see the connections between their lives and what's happening around the world.

"Quantitative reasoning problems are context dependent, interdisciplinary, open-ended tasks that require critical thinking and the capacity to communicate a course of action," he added.

The institute Mayes now heads will create broadly inclusive partnerships across academia, business, education and research centers in southeast Georgia, support professional development, outreach, curricular development, the creation of innovative courses and research in STEM education through grant funded projects. The Institute, one of the first of its kind, will be distinctive in that it will focus on serving rural southeastern Georgia.

"Georgia Southern has a track record in developing programs that serve the special needs of our region, a largely rural and ethnically diverse area," said Charles Patterson, Ph.D., vice president of research and dean of the Jack N. Averitt College of Graduate Studies. "Our goal is to provide greater access for rural and underserved populations to science, technology, engineering and math by helping these students to pursue degrees and careers in those areas."

"i²STEM^e is the only institute within the University System of Georgia to address all four components of STEM disciplines within the framework of educational practice," said Keel. "It is unique, but more importantly it addresses a specific need in our state."

In addition to Mayes, Institute Fellows are Joy Darley, Ph.D. and Jim LoBue, Ph.D., both from the College of Science and Mathematics; and Shonda Bernadin, Ph.D., from the Allen E. Paulson College of Engineering and Information Technology.

For further information about the Institute, please contact Dr. Robert Mayes, rmayes@georgiasouthern.edu or visit the Institute's website at www.georgiasouthern.edu/stem.