Broadening STEM Perspectives by Increasing Participation

By Brad Stager

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novation requires diverse perspectives and the Florida Georgia Louis Stokes Alliance for Minority Participation (FGLSAMP) is a program that helps ensure students from historically underserved backgrounds contribute their ideas and talents in solving problems.

The University of South Florida is a member of the alliance, which includes colleges and universities in Florida and Georgia. Its purpose is to increase the number of underrepresented minority students in Science Technology Engineering and Math (STEM) programs in academia and ultimately, the workforce. It does so by providing mentorship as well as research and professional development opportunities. The National Science Foundation provides funding for FGLSAMP.

College of Engineering Director of Diversity Programs Bernard Batson, who serves as USF FGLSAMP Bridge to the Doctorate Program Coordinator, says USF’s long-standing participation in the alliance has reaped great benefits for students.

“USF has been an institutional member of FGLSAMP, a coalition of 14 institutions in Florida and one in Georgia, since it was established in 1992 with the first grant award from NSF. Our FGLSAMP undergraduate and graduate alumni have received national awards, gained admissions to prestigious graduate programs, and employment with Fortune 500 companies.”

One of the key elements of FGLSAMP is the Bridge to the Doctorate initiative. LSAMP alumni admitted into STEM doctoral programs in the College of Engineering, College of Marine Science, College of Arts and Sciences or Morsani College of Medicine are connected to a range of academic development and research opportunities. The Bridge to the Doctorate program also provides a $32,000 annual stipend, as well as full tuition/fees and health insurance, for two years. To help students transition into their graduate program, they are provided coaching in graduate school expectations and “soft skills”, including proposal writing. Fellows are also encouraged to participate in peer-to-peer and undergraduate mentoring activities along with STEM outreach.

According to Batson, FGLSAMP is an important tool for the College of Engineering’s objective of promoting diversity in the classroom and the professional workplace.

“The NSF FGLSAMP Bridge to the Doctorate project has been the cornerstone for signature diversity initiatives at the graduate level in the College,” says Batson. “Since 2004, it has enabled us to recruit and mentor nearly 60 minority engineering graduate students who would have otherwise never enrolled at USF. In particular, a significant number of the Bridge to the Doctorate fellows would never have enrolled in an engineering graduate program anywhere without the funding provided by the program.”

Batson also says the success of USF’s diversity efforts, including its FGLSAMP participation, has resulted in recognition from other funding programs and private foundations such as the Alfred P Sloan Foundation, while bringing national visibility to the university in conferring engineering doctoral degrees to African American and Hispanic students.

As a child, Shamara Collins nurtured her youthful aspirations to be an electrical engineer by watching “The Magic School Bus,” an animated children’s television series based on a book series of the same name that helped kids learn about science in a fun and entertaining way. She attended Morgan State University, a Historically Black College and University (HBCU) in Baltimore for her B.S. in Electrical Engineering. Now she’s a PhD candidate in USF’s Electrical Engineering program conducting solar research with Chris Ferekides, professor in the Department of Electrical Engineering, within the Thin Films Photovoltaic Laboratory. She says FGLSAMP’s Bridge to the Doctorate is helping her reach her goals for a career focused on renewable energy policy.

“It’s made a huge difference in my ability to do what I’m doing,” she says. “The FGLSAMP Bridge to the Doctorate program has filled in a lot of the blanks you don’t really understand. They provide professional development workshops, visiting minority scientists as role models, speakers and external mentors, support for writing fellowship proposals, assistance in presenting at conferences, and overall guidance throughout the PhD process beyond the two-year fellowship.”

William Serrano-Garcia’s first laboratory was the family kitchen in Puerto Rico. Since then, he’s moved up to the Department of Electrical Engineering’s Advanced Materials Bio & Integration Research Laboratory with Sylvia Thomas, associate professor in the Department of Electrical Engineering, where he’s a PhD student researching semiconductor polymers for nanodevices.

“With The Bridge to the Doctorate, there is both financial and comprehensive support to help me achieve my PhD,” says Serrano-Garcia. “Without this help, at this stage of my life I wasn’t going to be able to pursue a PhD at USF in electrical engineering.”

Serrano-Garcia says he wanted to attend USF’s College of Engineering because it has both the research and academic resources he needs to pursue his research interests in materials science.

Professor and Electrical Engineering Chair Thomas Weller is the USF Co-Investigator and Site Director for FGLSAMP BD. He says the future of STEM related research and commerce depends on helping young scholars like Collins and Serrano-Garcia achieve their goals.

“We don’t have enough talented domestic students for STEM. We absolutely depend on this underrepresented population for PhD students.”

Weller is unequivocal about the merits of ensuring people from all communities are engaged in STEM fields.

“There’s a lot of innovation and enthusiastic exchange of ideas that comes from having diversity.”

Looking ahead, Batson is optimistic that the scholarly alliance will continue to yield benefits to participants and society.

“The future is bright because USF and FGLSAMP share similar goals of diversifying and broadening the nation’s STEM and technological workforce,” he says. “Furthermore, FGLSAMP Bridge to the Doctorate is aligned with USF’s strategic goals by fostering global engagement and social responsibility for our fellows through international research and STEM outreach opportunities.”

For more information about the Florida Georgia Louis Stokes Alliance for Minority Participation Bridge to the Doctorate Program, you can visit its website at http://hosted.usf.edu/fglsampbd/or call Thomas Weller at (813) 974-2740.