Past Participants Tout Benefits of REU Program

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Students from across the country will spend the next 10 weeks developing consumer networking skills. It’s part of a Research Experiences for Undergraduates, or REU, program at Mizzou Engineering funded by the National Science Foundation.

And for some, it’s life changing.

The REU program gives undergraduates an opportunity to conduct research on fundamental topics in consumer networking. Students work with multi-disciplinary experts. At the end of the program, they develop an innovative prototype that relates to a real-world application. Often, it also introduces participants to the idea of graduate school.

Brady Kruse, a student at Mississippi State University attended last summer. He is majoring in computer science but until then wasn’t sure what he wanted to do with it. Thanks to his work with virtual reality during the REU program, he now has a clearer idea of his future.

“It was like you threw a puzzle out on the floor, and all the pieces fell perfectly into place,” Kruse said. “It opened my eyes up to graduate school, to doing research as a professor. But I’m also interested in policy. I’m interested in how technology can affect the human experience. It definitely opened two big doors for me.”

Program Provides Springboard to Graduate School

The program, now in its 13th year, is selective, accepting roughly 10 to 15 percent of all who apply. Participants come from a mix of small schools, many from Missouri, and larger national research universities, said Prasad Calyam, who has been program director for the last four years.
Gabby Hoefer attended the REU while pursuing her undergraduate degree at Samford University in Birmingham, Alabama. She had conducted research in psychology before participating. The REU program introduced her to augmented and virtual reality.

Now, Hoefer is pursuing a master’s in computer science at Brown University. She’s also conducting a coveted internship.

“The REU program laid the foundation for my interest in AR/VR design,” she said. “I find myself utilizing the skills I learned through the REU event today, while interning on the AR/VR Design and User Research Team at Facebook.”

Calyam, an associate professor of Electrical Engineering and Computer Science, hears similar testimonials each year.

“They often write back to me saying the program has enabled them to go to the next step in their careers,” he said. “The program helps them become innovative in thinking and research. They get to really focus on a problem for an extended period of time. The rewards are pretty awesome. And they get into graduate schools and into some top programs.”

Caleb Koch reached out to Calyam last month informing him he will be attending Stanford University in the fall.

“Mizzou’s REU was my first foray into computer science research and definitely an important component of all my applications,” he wrote.

In addition to being accepted at Stanford, Koch has been awarded National Science Foundation and National Defense Science and Engineering Graduate Fellowships.

During his time at the REU program, Koch worked on offloading techniques in mobile edge networks.

“It provided a good foundation for a lot of the subsequent projects I worked on,” he said. “It was also great to collaborate on a project and meet other people with similar interests.”

**Different Format, Similar Outcomes**

This year’s REU looks a little different. Because of the COVID-19 situation, participants will work on projects remotely. While there are benefits of hosting the event on campus, Calyam stressed that the virtual experience will complement consumer networking research. Participants will be relying on the tools they are studying.
And while the delivery will change, Calyam expects participants to see similar outcomes. They will complete the program prepared to publish research findings in a peer-reviewed conference, workshop or symposium.

“We’ve consistently had students publish papers from the program,” Calyam said. “That’s been a very important part of the program’s success.”

Hoefer and her team published their research on virtual learning in a paper for the IEEE Consumer Communications and Networking Conference.

Kruse’s team also studied the use of virtual reality to help youth with autism better learn in remote sessions. They presented their paper in a REU Symposium organized by the Council of Undergraduate Research. The team is putting final edits on a manuscript they hope to publish in a top-tier journal in the coming months.

The most significant benefit of the REU program, though, was access to top-notch faculty, Kruse said. He urges future participants to take advantage of those networking opportunities.

“Get to know your mentors,” Kruse said. “Hunker down and devote yourself to it. If you put in the effort, this can have an afterlife that pays off well past the 10 weeks of the program. It was crazy how it all worked out for me. I was a huge video game nerd, and now I’m developing virtual reality. How cool is that?”