Summer Research Pays Off for WISE Students

By: Desiré Bennett

Undergraduate women representing an array of majors and interdisciplinary backgrounds complete successful summer research by presenting their findings at the annual UC Women in Science and Engineering Program/REWU event.

This summer, 22 undergraduate women students worked for 12 weeks with faculty mentors on research projects in Biology, Chemistry, Mathematics, Physics, Engineering, Nursing, Pediatrics, and Science and Health (Clermont). During their 12 weeks, each student is paired with a UC faculty mentor. Each week, all women in the program meet as a group to hear from guest speakers and discuss their individual projects. Weekly workshop topics range from how to read scientific papers, to developing leadership skills and to making decisions on graduate work.

The UC WISE/REWU (Research Experience for Women Undergraduates) program has been offered annually since 1999 and provides workshops on the research process, leadership skills, learning styles, business etiquette, and preparation for graduate school. This year, the students presented their research findings at the event in the Engineering Research Center on August 1, 2013.

Urmila Ghia, PhD and Chair of the Women in Science
and Engineering Program, explains the program’s importance. “The goal is to encourage students to participate in research because data shows that participation in research is a strong tool for retention, for a positive experience for the students, and I have data to support that every student who has gone through the WISE program and graduated from the WISE program also graduated from UC,” she said. “That is 100 percent retention for WISE participants.”

According to Dr. Ghia, “It is very impressive to see how many of the WISE graduates have gone on to graduate school. I cannot put sufficient value on what we get back from this program.”

Among the many positive aspects of the program is student engagement and enthusiasm. Students, like Ankita Sharma, are excited to talk about their research findings. Sharma, a biology major who is considering becoming a physician, was advised by Anna Gudmundsdottir on her research project Effects of Substituents on Photorelease, which centered on the effects of laser light on organic compounds.

Sharma talks about the benefits of participating in the Summer Research program, “I’ve accumulated so many things through the research, like critical thinking, being more innovative, being patient – that’s all necessary for any job that I’ll undertake in the future.”

Interim Vice President and Dean of the Graduate School, Bob Zierolf, believes that the WISE program is invaluable. “We in higher education need to change the face of the cadre of the people who do high level research,” he said. “This program, over the last 15 years, has begun to change that face.”

In addition to the personal benefits of conducting research as an undergraduate are the possibilities of making a broader impact on society. Electrical engineering student Ashley Mattson’s research project, Medical Diagnostics and Athlete Monitoring with a Wearable Electronic Patch, focuses on a sweat collection device to be used for a cardiac stress test or diagnostics.

Mattson, who was advised by Dr. Jason Heikenfeld, says that the device could lead to inexpensive diagnostic tools. “In our lab they are doing a lot of research on sweat collection devices with our collaborators so I think it will eventually lead to cheaper diagnostics for the public.” Mattson believes there is a chance for commercialization of the device in the future.
As a testament to the program’s significance, Board of Trustees member Rob Richardson said “I am really impressed with the level of intellect, detail and passion that I met as I spoke with students today. The level of complexity and detail just really impresses me and lets me know that the future of our university is in really great hands.”

Dietetics pre-med student Jenifer Hatch, who was mentored by Laura Sagle, talks about the potential impact of her research project, Protein-Nanoparticle Biosensors, which focuses on developing a biosensor for things like blood glucose. “The impact is that it will be cheaper. And in medicine – dollars equals lives,” she said. “The more broadly you can make any technology available by lowering the cost of it, the more people can use the technology.”

The face of the WISE/REWU program continues to flourish through the tireless efforts of Dr. Ghia, the priceless assistance from program mentors, and via the excellent contributions made to research by the students.