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Tempe Union students learn about agriculture in lab setting

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By Coty Dolores Miranda
Special for The Republic | azcentral.com
Fri Jul 12, 2013 9:54 AM

There was a time when agriculture as a career meant working on the family farm or perhaps joining the County Cooperative Extension Office.

Today's students interested in agriculture can choose from college degrees including molecular biology, chemistry, biochemistry, engineering, entomology, botany, sustainability and soil science.

And that's what area high-school students — including 11 Tempe Union High School District upperclassman and graduates — are learning this summer with paid internships or special volunteer opportunities.

South Mountain Community College — in partnership with Arid Lands Agricultural Research Center, the University of Arizona's Maricopa Agriculture Center, Estrella Mountain Community College and the University of Arizona Cooperative Extension — provided stipends for many of the students.

The goal of the three-credit internship is to encourage students to consider careers with the U.S. Department of Agriculture and to introduce them to "real-world" applications of science as well as careers in research.

This is the second year of the internship program, which is supported by the Advancing Undergraduate Bioscience Engagement Track grant funded by USDA.

To qualify as interns, students underwent a rigorous selection process that required a recommendation from a biotechnology teacher at one of South Mountain's 10 established grant partnership schools, which include Desert Vista, Mountain Pointe and Corona del Sol high schools.

This is the second internship for 2013 Desert Vista graduate Kendrick Chaney, 18, who is preparing to enter University of California at Berkeley this fall. With USDA Agricultural Research Service scientist Joe Hull as his mentor, Chaney conducts experiments at the Department of Agriculture lab.

"This summer, working in Dr. Hull's lab, I'm looking at different proteins inside pests to better understand how to control them," said Chaney, pointing to his polymerase chain reaction lab machine that magnifies DNA segments. "From

this procedure, we look at relative expression levels inside the protein."

Hull, who is overseeing four interns, and Desert Vista biology and biotechnology instructor Birgit Musheno, said the summer internship benefits everyone involved.

"A project Kendrick did last year was presented at an international conference. All my students and Birgit contribute to the lab as I give them actual projects to work on," Hull said. "We treat them professionally, and they get time behind the bench to see what it's like working in a scientific setting. To catch them between their junior and senior years can open up new avenues for them in their academic careers."

Musheno, who started teaching biology at Desert Vista in 1997 and founded the biotechnology program nearly 10 years later, said:

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"I worked in Dr. Joe Hull's lab on a project to identify which DNA enzymes can best help us to see if there is a way we can disrupt the metabolism of the insect pest. Insecticides do that, but they're broad spectrum and might also kill other insects or butterflies that aren't bothersome. This was part of a larger research project to identify biological control methods for controlling specific pests that cause damage to important crops like cotton.

"This research will hopefully help reduce our dependence on pesticides that indiscriminately kill all insects, whether they're beneficial or harmful. This is a new way of using molecular biology that benefits the farmers, the consumer, certain industries and those who care about the environment, which is pretty much the whole world."

Other paid interns include recent Desert Vista graduate Suhitha Veeravelli and sophomores Katelyn Miyasaki and Gen Fitzgerald.

Desert Vista students and grads who are USDA summer volunteers are: Jay Raju (Class of 2014), Dylan Moxley and Ali Icenogle (both 2012). In addition, Desert Vista seniors Jordan Young and Kendall Stratton are volunteers earning college research credit.

Mountain Pointe's Dannielle LeRoy and Corona del Sol's Miruthula Jegadesan are also summer interns.

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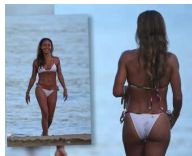
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