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CONTACT:
Lavidge
(480) 998-2600
Caitlin Wendt x514
sciencefoundationarizona@lavidge.com

Education Partnership Introduces Students to Engineering Course Work Creating Workforce Pipeline

PHOENIX (Sept. 3, 2014) – Since 2008, University of Arizona (UA) engineering faculty have worked with science and math teachers, as well as engineering and other Career and Technical Education (CTE) instructors at Arizona high schools as part of UA’s innovative Introduction to Engineering course. Known in high schools as Engineering 102 HS, with funding by Science Foundation Arizona (SFAz), 1,218 high school students have enrolled and received college credit for the course.

Now in its seventh school year, the program has grown to operate primarily on tuition dollars, and is in 38 diverse high schools throughout 18 different school districts in two states. Approximately 39 teachers deliver the hands-on course work to more than 300 students who are taking the class for UA credit.

Engineering 102 HS is a college-credit bearing course designed to help senior high school students get hands-on experience in the university’s engineering program. Students are required to work on design projects, give presentations and write reports just as they would do in a college setting. This approach builds student interest in engineering careers and helps prepare them for coursework that they will take once enrolled at the college level.

SFAz, a nonprofit public-private partnership that serves as a catalyst for revitalizing Arizona and strengthening its economic future, funded the first three years of the program—helping the UA launch and develop the program, building capacity with additional funds from Intel Foundation, Salt River Project, Texas Instruments, John Deere Foundation and the Arizona Department of Education, and leading to a more sustainable tuition-based model. SFAz funded the program through one of UA’s partners, Tucson Unified School District.

Two of the primary goals of the course are to recruit high school students to major in university engineering programs and to increase the rate at which they continue with engineering majors.

“This program introduces students to the engineering world and gives them the opportunity to explore it as a career option. By learning a semester-long college-level course in a year-long high school setting, students are able to engage more thoroughly in the engineering projects and therefore retain engineering fundamentals more easily,” said William Harris, president and CEO of SFAz. “We are happy to see more educators getting involved in the engineering program and the success of our future workforce. We have seen an increase of ten new high schools and four new school districts during the past year.”
Engineering 102 HS gives high school seniors the chance to acclimate to the academic challenges in a familiar environment, and appreciate the importance of a strong math and science foundation, all while discovering viable career opportunities.

Many Engineering 102 HS projects focus on engineering design and involve calculations, simulations, building and testing. Students work to solve real-world problems in areas such as solar technology, aeronautics and astronautics, water treatment, electromechanical robotics, remote sensing and urban infrastructure, as well as in areas as broad as bettering human health by designing cochlear ear transplants or biologically-inspired mechanical hands.

“Our hope is through introducing a college course in high school, students will stay with the engineering program through college graduation and have a better opportunity for success. There are many career paths that students can take with an engineering degree,” said Jeff Goldberg, Dean of UA’s College of Engineering.

Leaders at UA and SFAz will continue to recruit high schools, teachers and students to participate in the Engineering 102 HS course. SFAz hopes to expand the network into Arizona’s rural communities.

About Science Foundation Arizona
Science Foundation Arizona (SFAz) is a 501(c)(3) non-profit organization initiated in 2006 by the Greater Phoenix Leadership Inc., Southern Arizona Leadership Council and the Flagstaff Forty in conjunction with the executive and legislative branches of state government. SFAz serves as a catalyst for high-wage, knowledge-based jobs and economic diversity through administration and strict oversight of research, development and education grants to public education and other non-profit research performing institutions. For more information, visit www.sfaz.org and like us on Facebook.

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