Beyond Hallowed Halls: Universities Reach Out to Youth
By Leah Sherwood
Boise State Office of Communications and Marketing

The best way to engage young students in science and engineering is by bringing the textbook to life. From giving tours and demonstrating fundamental knowledge for inquisitive novices to providing research opportunities for high school students, university laboratories are becoming more accessible to all grade levels.

“Sometimes science can seem dry and lifeless to students, especially if their only exposure is from a textbook,” said Michael Davis, a graduate student who works in the forensics laboratory in Boise State University’s Biological Sciences Department. “Outreach for primary and secondary education enrichment is one of the more interesting and important activities that we undertake.”

Davis, who is investigating DNA diversity in the Northwest’s immigrant Basque population, said that students attending high schools with limited resources benefit most from outreach programs that allow their participation in lab exercises and expose them to a state-of-the-art research environment.

“In March, students from Salmon High School visited. We set up a mock crime scene and let them practice dusting for fingerprints and loading agarose gel for electrophoresis of ‘crime scene’ DNA,” Davis said. “For a school with limited teaching resources, it was a great experience.”

Byung Kim, a professor in the Boise State Physics Department, has had high school juniors and seniors employed in his lab. Students participate in several different projects, including observing plasmid DNA structures by atomic force microscopy and using scanning tunneling microscopy for observation of organic substances on metal surfaces.

Kim said that frequent interactions between professors and younger students benefit both parties.

“Interactions provide helpful information for the students about science at the college level and also help attract promising high school students to scientific programs,” he said.

So how can students get involved? It depends on the college or university, but many facilitate workshops, camps and internships. For example, Boise State’s College of Engineering offers educational workshops such as “e-Girls,” a two-day class for girls interested in engineering and computer science careers, and “e-Camp,” which provides students the chance to explore careers in engineering and computer science with hands-on problem solving. In the College of Arts and Sciences, a physics workshop called “Measuring the Small” explores fundamental physical concepts behind measuring the characteristics of small scale-materials.
Students also can contact colleges and universities directly. Fabiola Juarez-Coca, Boise State’s concurrent enrollment director, believes all it takes is initiative.

“Students can find opportunities on their own by contacting individual professors or the department chair,” she said. “Opportunities are open to students with initiative who are ready for something more interesting and are ready to learn.”

Whether assisting faculty researchers in the lab or being immersed in the basics of an undiscovered discipline, experience at the college level creates a connection for high school students beyond the present moment.

“The ultimate part of education for many of us is the experience of it: the touching, feeling, smelling and seeing — that drives your ideas and your thinking” said Merlin White, a Boise State biology professor who has training in education. “Mentorship also plays a major role. Anything that can help bring those aspects together should be fostered.”