Hands-on activities for young students at Kids' Tech University solidify excitement generated by morning lectures.

KIDS' TECH UNIVERSITY

Sparking excitement about STEM disciplines

BY DENISE YOUNG

The sciences and mathematics usually aren't popular with most 8- to 12-year-old kids. That may be changing, however, thanks to Kids' Tech University (KTU), an education program designed to get children excited about the subjects—and keep them excited.

KTU is a semester-long educational research program sponsored primarily by the Virginia Bioinformatics Institute (VBI) and the Virginia Cooperative Extension's 4-H Youth Development Program. It allows groups of up to 450 children the opportunity to hear lectures on topics ranging from "Why are computer programs so frustrating?" to "Why are plastic bottles bad for alligators?"

Kids' Tech is the brainchild of Reinhard Laubenbacher, a professor and deputy director of education and outreach for VBI. During a visit to Germany, Laubenbacher read an article about a program in which children attended free lectures about the sciences given by university professors. "They managed to reach kids," says Laubenbacher. "If you can get 300 kids in a lecture hall on a Saturday morning, you must be doing something right."

He was so intrigued by the project that he paid a visit to the people who started it. "One of the biggest problems math and science have is a public relations problem," says Laubenbacher, who wanted to create a way to counter a lack of appreciation for the science, technology, engineering, and mathematics (STEM) disciplines. And thus, Kids' Tech University was born.

The program found support across the university, from its partnership with student volunteers who serve as mentors for children during the lectures, including members of the graduate organization Citizen Scholars, a group that fuses academic achievement with community involvement, to assistance from such groups as the Physics Outreach Program and the Center for the Enhancement of Engineering Diversity.

KTU includes several components that provide ways to assess its impact and success, important elements in securing funding for such a venture. In addition, it offers a

Caitlin Kelleher, assistant professor of computer science at Washington University in St. Louis, explains why some computer programs are frustrating.

hands-on activity to solidify the excitement created by the morning's lecture. Crucial, according to Laubenbacher, is the virtual component of KTU, which includes online labs, videos of lectures, a kids' forum, and a section called "Kids Tech in the News" to keep children and their parents updated on news media related to the events.

"I don't think of the lectures as lectures, more as stories. Here's a scientist who's excited about his or her work, and they tell you a story about it," says Laubenbacher. "But if kids are excited and then they go home and do nothing with it, they lose that excitement." By adding a virtual feature, the program allows children to continue developing and building on that enthusiasm.

KTU students get involved in a lecture by Louis J. Guillette, professor of reproductive biology at the University of Florida.

"Our goal isn't to teach kids," adds Kristy DiVittorio, graduate and post-graduate education program manager for VBI. "Their teachers are doing a good job of that. We're trying to get them excited about learning and exploring these topics further."

Barry Whyte, VBI strategic and research communications officer, whose group handled the public and media relations aspect of KTU, says the program's various elements make it the only one of its kind in the U.S.

Laubenbacher, who is already planning and seeking funding for a similar program in spring 2010, has even greater goals for KTU's future. He envisions hundreds of franchises across the U.S. in which the virtual features of KTU would be accessible to other universities. Since the online aspect is the most expensive, Laubenbacher would like to centralize it, making registration, assessment, and even content standardized in these sorts of programs. "I want to create a brand that stands for high-quality online science content," he says. "That way, when you Google Mars, you'll find information created by real scientists who study Mars."

Such a goal isn't without its hurdles though, and in this case, the biggest problem is funding. "KTU lives in a no-man's land because it's not tied to formal K-12 education or to formal university education, a fact which lends flexibility but also makes it difficult to fund," says Laubenbacher.

Still, Laubenbacher considers the cause too worthy to give up on easily. "Even if these children don't become scientists, at least they learn more about science." In a society where issues such as stem-cell research and renewable energies are often at the forefront of the political arena, knowledge of science is necessary to create a better-educated population. "We need to give science and technology the right place in our society in order to be competitive," he adds.

And for those who wonder if a university-style experience can generate the enthusiasm KTU's creators hoped it would, one need only witness the children's reactions. "When the lectures had finished, the whole room put their hands up," says Whyte. "When you see the level of engagement of the children at Kids' Tech University, that's when you can really appreciate the value of this program. What struck me the most was that the children asked lots of really great questions that reflected their natural curiosity about the world. KTU gives kids heaps of incentive to build on their interest in science. It's an ideal opportunity for them to start thinking about science as a rewarding activity for them in the years ahead."