Energy camp teaches Baton Rouge high school students about opportunities in the STEM disciplines

In the 21st Century technological innovations have become increasingly important as we face the benefits and challenges of both globalization and a knowledge-based economy. To succeed in this highly technological society, students are being encouraged to explore and develop greater interest in careers that touch science, technology, engineering and mathematics (STEM) to levels much beyond what was considered acceptable in the past.

Realizing the importance of attracting students into the STEM disciplines, LSU's Center for Computation & Technology (CCT) sponsored a number of educational opportunities for K-12 students this summer. The first annual Energy Venture Camp, sponsored by Shell and supported by CCT and other entities, took place the week of July 22-26 and closed the 2013 summer camp season.

To explore energy-related concepts, the participants made a solar energy house, tested different types of light bulbs for their energy efficiency, fabricated windmills, distilled coke, put together a basic electric generator, and learned how to program robots and make computer simulations. They also worked with staff from the Baton Rouge Community College, LSU chemical engineering and LSU petroleum engineering laboratories to understand what engineers, operators and technicians do. On the last day, Shell professionals discussed job opportunities in the oil and gas field.

"We did many hands-on activities," said Vinay Valsaraj from Baton Rouge High School. "The experience that I enjoyed the most was programming a robot to tell him where to go – straight, right or left, or in a circle. When I talk to engineers, I am always fascinated by what they do and how inquisitive they are. I am very inquisitive by nature, too, and this camp peaked my interest in engineering."

"We did experiments on the actual lab equipment, which most high school students don't have access to," said Madeleine Juneau from Baton Rouge High School. "My favorite activity was in the chemical engineering laboratory where we filled a dish with sand and water and put it in the tray dryer, checking it every ten minutes to see how much water had evaporated. This information is useful for detergent or pharmaceuticals companies."

"I always wanted to go into the medical field to become a pediatrician," said Jaliyah Pabon from Redemptorist High School. "I participated in several camps this summer to see all my options. This camp showed me that I enjoy building things, putting things together, and seeing how they work. So even if I do stay in the medical field, I can become a medical engineer and help make prosthetics and similar things," she said.

Several LSU professors gave an overview of their field. "One of the activities that the students enjoyed the most in the petroleum lab was building a tree of valves with pipes and fittings," said John Smith, associate professor at the LSU Department of Petroleum Engineering. "They had to make sure it did not leak, and then open the tree to produce water from a cone-shaped tank into a bucket. The team that got the most water, won."

"Some of Shell's informal surveys indicate that interns and employees choose careers in the STEM field because of a teacher, parent influence and or by attending a summer camp like this one," said David Esquibel, Shell workforce development specialist in the Houston corporate office. "That's why we sponsor similar camps in Texas, at the University of New Orleans (UNO), and this year, our Workforce Development Initiative team introduced one here in Baton Rouge," he added.

Jeannette Thompson, who teaches at the Dunham School in Baton Rouge, contacted Shell on her passion and interest to bring this camp to Louisiana's capital. Last year, she accompanied her son and three other of her students to participate in a similar camp at the UNO.

"We stayed at a hotel in New Orleans for a week; this is how important it was for me as science is a passion of mine," Thompson said. "Shell employees were very impressed that somebody would do this, and when I suggested that they should do an energy camp in Baton Rouge, they agreed."

"Increasing the size of the STEM education pipeline will lead to innovations that will propel society forward," said CCT Director Joel Tohline. "Our objective is to encourage the young generation to choose STEM by teaching them that it can be fun. They need to take ownership in the new technology and realize that it will be their innovations that power a brighter future," he said.

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