

USC-CHEVRON FRONTIERS OF ENERGY RESOURCES SUMMER CAMP CHALLENGES FUTURE ENERGY ENGINEERS

This past June, 24 outstanding high school students and 2 science teachers from across the country experienced the 2013 Chevron sponsored Frontiers of Energy Resources Summer Camp. The summer program, in its 5th year, hosted by the USC Center for Interactive Smart Oilfield Technologies (CiSoft), offers the participants an amazing opportunity to explore the science base of various energy resources and shows them the possible career options that are currently available in the energy industry.

This year, the program included a number of engineering activities that gave the summer campers the opportunity to work as a team to learn collaborative thinking and to improve their problem solving skills. Besides a number of lectures and discussions led by USC and Chevron experts, the program included a field trip which introduced the students and the teachers to the highly complex and evolutionary energy industry. Phil Gresser, one of this year's campers from Cathedral Catholic High in San Diego, CA stated: *"I was impressed with many of the speakers. My favorite was probably the Chevron Vice President"*. (Mr. Warner Williams). The program concludes a team competition which allows the students to share their newfound knowledge and showcase their analytical skills. After only six days, attendees are able to propose realistic solutions to genuine challenge questions, such as the estimation of business costs for hypothetical conversion of coal power plants to natural gas plants, determination of the viability of solar power at its current state in various scenarios, and the evaluation of the capital cost required to build coal, solar, natural, nuclear, and oil and gas operations. That is pretty impressive for a group of high school students!

The students acknowledged the great opportunity that was given to them, and were thankful to USC and Chevron, *"Thank you so much Chevron for sponsoring this wonderful opportunity. I've learned astronomical amounts about energy, and how Chevron and the rest of the world are working to secure a sustainable future"*, said Charmayne Floyd from San Marino High School in San Marino, CA. But the students are not they only ones fascinated by the program; Dr. Iraj Ershaghi, director of CiSoft and USC's Petroleum Engineering Program who oversees the camp program, was impressed with the level of the understanding of the students during their team presentations.

This summer program has proven to be an effective educational opportunity for academically outstanding and aspiring engineering students. In fact, 13 of former participants are now USC students studying engineering. Michael Goulis, former student of Palos Verdes High and current USC Computer Science student, reflects on his experience:

"In 2009, the first ever USC/Chevron Frontiers of Energy Resources Summer Camp launched for a few lucky high school students. They were able to get an in depth look at the world's energy portfolio from industry professionals and executives in ways that were never available before. Participants were imparted with a wealth of rare exposure to a variety of energy industries and were informed of the collegiate and professional paths and needs in energy resources. They were able to reinforce their team building skills and refine their knowledge which all culminated in their final presentation. That very first year, I was incredibly fortunate to be carefully chosen as one of those select few students.

Years later, I got an opportunity to revisit that very same program, this time as a member of the program's staff. I had no idea how in just a short few years the program would have evolved into something far beyond the already advantageous opportunity. Students got hands on experience with working with photovoltaic and a whole host of new energy and engineering related activities that exposes the attendees to the cutting edge of modern energy.

USC and Chevron are really proving what they do best: providing a scholastic and edifying experience that has only improved with age. I will cherish my experiences immensely"

