



Baton Rouge Energy Camp 2015

Energizing Students for STEM

Twenty-six students from fourteen Baton Rouge area schools, Houston, and even Honduras studied scientific concepts, listened to college talks, and experimented in labs at **BRCC** and **LSU** as part of the third annual Energy Venture Camp put on by Shell Oil Company. Jeannette Thompson and Richard Hansen,

teachers from Catholic High and The Dunham School along with student assistants, Matt Huffman (Dunham) and Madeleine Juneau (BRMHS), engaged campers in multiple hands-on activities to spark interest in science and engineering.



Teammates, Bill Long and Elie Plater, compete against other teams to get their bouncy ball across the field with PVC pipes. *Photo by Madeleine Juneau*



Mr. David Esquibel talks to students about what they've learned throughout the week. *Photo by Dr. Yao Zeng.*

David Esquibel, head of Workforce Development for Shell Oil, spearheads this annual collaborative effort to introduce high schoolers to Shell's industry. This fun, educational opportunity is meant to excite kids about STEM, while also giving them a competitive edge in their studies, educating the future workforce.

Jonathan Gladias, a student all the way from Houston, TX, heard about the camp and decided to travel just for the wonderful chance to study on a college campus.

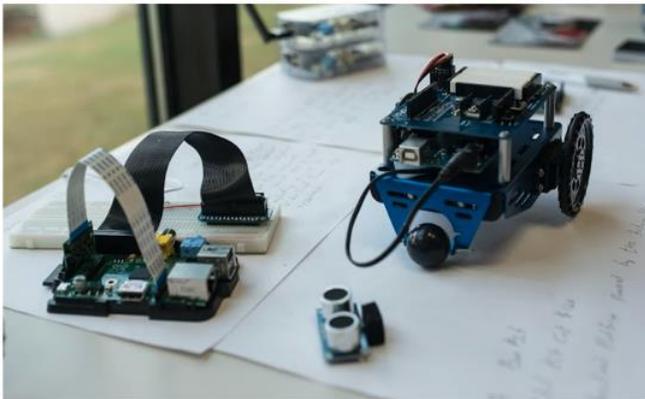
"I want to attend LSU next year, and the topics we learned about greatly relate to what I want to study," he said. "I want to become a chemical engineer and was taught the basics of what to expect in college, and all of the lectures throughout the camp also taught me a great deal of what companies expect out of their engineers."

Students met for five days at BRCC classrooms, the BRCC process technology lab, and LSU coastal energy, physics, petroleum and chemical engineering facilities. Short field trips to the LSU AgCenter's La House Resource Center and LSU Natural Science Museum rounded out the program. Students divided into groups led by six team leaders. Campers learned basic science parameters relating to energy and engineering in general such as phase change, heat, density, and pressure, and later applied the knowledge they acquired through many hands-on experiments. Campers were also introduced to the multiple energy-related jobs available, which showed them the practical applications of their current school studies.



Mrs. Jeannette Thompson teaches student about machinery at the LSU CHE Lab.
Photo by Dr. Yao Zeng

Competitions invigorated campers who built the highest spaghetti tower and who nested eggs in materials designed to help eggs survive a five-story drop. BRCC PTEC senior students made themselves available to campers as they studied large process units such as cooling towers, heat exchangers, boilers, phase separators, distillation columns, and centrifugal pumps with the help of small-scale acrylic models that the campers could operate themselves.



Bo-Bots on display for parents at the PERTT Facility. Photo by Dr. Yao Zeng

also toured the LSU COGEN power plant that supplies electricity, air conditioning and steam to LSU.

On the last day, campers were given a tour of the LSU Petroleum Engineering Research and

Later in the week, the camp visited the Chemical Engineering Junior Lab at LSU and worked with chemical engineering PhD students. Physics and Astronomy master students talked to campers about Nano technology and the many different types of energy. Campers



Students observe oil derrick at the PERTT Lab.

Technology Transfer Laboratory (PERTT) and learned about the drilling process and the up stream operations of the oil industry. Student teams set up their own “Christmas trees” and competed to pump the most fluid, learning the difficult balance for drillers between efficiency and safety. The camp culminated with a presentation and reception at the PERTT Lab where students presented some of the technical processes they studied.



Proud parents clap at the end of the student presentations.
Photo by Dr. Yao Zeng

Parents were able to view small experiments their children worked on over the week while congratulating campers and enjoying a reception. Many campers stayed long after the ending ceremony, showing photos to parents and talking with their new friends. Campers like Joy Liu, a rising freshman at Baton Rouge Magnet High School, appreciated the well-rounded

experience. “My favorite part of camp was meeting new friends and professors,” she said. “It also gave me an introduction to energy and taught me to be more aware of my consumption of it.”



Baton Rouge Energy Venture Camp 2015.

Photo by Dr. Yao Zeng.



Written by Madeleine Juneau, BRMHS '16

Special thanks to our guest speakers:

Dr. Sung Myungkee ~ BRCC Professor of Physics
Dr. John Flake ~ LSU Professor of Chemical Engineering
Mr. Tony Cupit ~ Cogen Maintenance Manager of LSU Energy Services
Dr. Luis Espinoza ~ Research Associate of LSU Ag Center
Mr. Richard Hanley ~ Owner of Hanley Foods
Dr. Les Butler ~ LSU Professor of Inorganic and Material Science
Dr. Chris D'Elia ~ LSU Dean of School of the Coast and Environment
Dr. Edgar Berdahl ~ Assistant Professor of LSU CCT
Dr. Karsten Thompson ~ LSU Department Chair of Petroleum Engineering
Mr. Randall Hughes ~ LSU PERTT Manager
Mr. Jeff Shaw ~ Owner of Gulf Solar
Dr. Keith Dicharry ~ Principal Expert, Process Control / Automation Dir, NCE/T,
Technical Expertise BASF
Mr. David Esquivel ~ Corporate Workforce Development SHELL

Link to our video:

<https://www.youtube.com/watch?v=PSg7bPcWouU>