



National Science Foundation – Math Science Engineering Partnership – Summer Experience for Middle and High School Students

Colorado State University

College of Engineering and School of Education

CSU Facilitators – Dr. Thomas J. Siller, Aaron Benally, Dr. Michael A. De Miranda, Todd Fantz

June 8-13, 2008

Target Audience – Middle and Junior High School; grades 6-8

June 22-27, 2008

Target Audience – High School; grades 9-11

Topic: *Artificial Intelligence: Computing, Designing and Robotics*

Students will explore the many dimensions of engineering design, programming, and robotics.

Students will engage in the design, construction, analysis, programming and testing of their own smart robot. Students will be challenged to build their own robots with program staff and college students.

This program is designed around informative work sessions, hands-on laboratory experiences, field trips and expert guest speakers. Emphasis of this engineering experience is to demonstrate how math and science are used to create the designed world.

June 15-20, 2008

Target Audience: Middle and Junior High School; grades 6-8

Topic: *Clouds, Climate and Weather*

Using an interdisciplinary approach, students will become experts on Clouds, Climate, and Weather.

They will learn how to “do science” by using observations and experiments, and will develop their abilities to critically question topics in weather and climate. Such questions as “Do cities affect the weather?” “Can it really rain fish and frogs?” and “Hey, what is the greenhouse effect after all?” will be answered. Students will discover the secrets of Clouds, Climate, and Weather through participating in a variety of learning strategies including art, storytelling, play writing, poetry, and video creation.

They will learn about the variety of careers, from science, business, law, communications, and many more, that benefit from knowledge about the weather and climate. The program’s emphasis is on how exciting and rewarding this area of study can be, and how they can apply their advanced knowledge of Clouds, Climate and Weather in their future endeavors.

June 10-16, 2007

Target Audience: High School students; grades 9-11

Topic: *Renewable Energy: Hydrogen Fuel Cell Technology*

Students will explore advanced concepts in alternative energy, focused on the future of hydrogen fuel cell technology. Students will learn about the engineering and science design challenges faced in bringing fuel cell technology into everyday use. Students will be challenged in the design, construction and testing of a working hydrogen fuel cell. This session is designed around informative work sessions, hands-on laboratory experience, field trips, and expert guest speakers. Emphasis of this engineering experience is to demonstrate how math and science are used to create the designed world.

For more information, contact Aaron Benally at Aaron.Benally@Colostate.edu

Colorado State University’s summer experience includes career and educational guidance to encourage students to set goals and prepare for their educational future.