AAPT3 Room 260F moderator: Don Donovan

8:00-8:20

Energy in Nature and Technology: A New High School Physics Curriculum

Steve Gensemer, The Ethel Walker School

Traditional high school physics fails to address the environmental issues that are on the minds of high school students today. I will describe a new physics curriculum we are developing with energy as the central concept, in which thermodynamics replaces mechanics as the first and most important topic. Students develop a model of the planet by following flows of energy carried by radiation, thermal currents, electricity, and so on. We draw heavily on the Karlsruhe Physics Course and their model of energy carriers to present a unified picture of classical physics.

8:25-8:45

Modeling Applied to Problem Solving

Andrew Pawl, Analia Barrantes and David E. Pritchard; MIT

Modeling[1] Applied to Problem Solving (MAPS) is a pedagogy which helps students transfer instruction to problem solving in an expert-like manner. Declarative and Procedural syllabus content is organized and learned (not discovered) as a hierarchy of General Models (a WIKI is under development to serve as a textbook for this). Students solve problems using an explicit Problem Modeling Rubric that begins with System, Interactions and Model (S.I.M.). Interactions are emphasized as the key to a strategic description of the system and the identification of the appropriate General Model to apply to the problem. MAPS is designed to be added into an existing course with minimal impact on the syllabus. We have employed the approach in a three-week review course for MIT freshmen who received a D in the fall mechanics course with very encouraging results.

1. M. Wells, D. Hestenes, and G. Swakhamer, "A Modeling Method for High School Physics Instruction", Am. J. Phys. 63, 606-619 (1995).

8:50-9:10

“Global Warming/Climate Change": Claims, Contradictions, and Methods

Laurence I. Gould; *University of Hartford*

There continues to be an increasing number of scientists and public figures around the world who are challenging the dominant political- and media-driven claims, bolstered by so-called “consensus” scientific views, that dangerous "global warming/climate change" is caused primarily by human-produced carbon dioxide. This public talk will show that the weight of scientific evidence strongly contradicts the alarmist claims. It will also explain what are some likely scientific, educational, economic, and societal consequences resulting from the corruption of the scientific method.

9:10-9:30

Anthropogenic Global Warming Q&A

Peter Glanz; Rhode Island College

Our elected officials are making decisions that will affect our childrens' childrens' children. As scientists we have an obligation to make sure that these decisions are based on good science. Many of the AGW questions and statements that are seen
each day in the media are included in this presentation. Scientifically valid answers will be offered to the questions that are chosen by the audience.