

American Physical Society
Physics and Physical Science Teachers' Day
Friday, April 11, 2008, Hyatt Hotel (formerly Adam's Mark)
315 Chestnut, St. Louis, St. Louis, MO
Main room: St. Louis Ballroom E; breakout rooms: Directors Row 43 and 44
(These rooms are on the fourth floor.)

AGENDA

- 8:00–8:20** **Breakfast** -- An opportunity to meet the APS Education and Diversity staff and to make connections with other physics teachers in the area.
- 8:20-8:30** **Welcome and Announcements**, *Ted Hodapp and Ed Lee, American Physical Society (APS)*
- 8:30-9:30** **Video/Talk – "Scale in the Universe,"** *Margaret McMahan Norris, Lawrence Berkeley National Laboratory*
Participants will view the award-winning video "Powers of 10"—shown courtesy of Eames Office (eamesoffice.com). After Q & A, the presenter will offer commentary on the scale of the universe and related physics research. You can order "Powers of 10" from the Eames Office Gallery.
- 9:30-11:00** **Workshops –**
- Designing a Roller Coaster**, *David Taylor and Valerie Michael, American Association of Physics Teachers (AAPT) Physics Teacher Resource Agents (PTRAs)--Main Room*
During this AAPT/PTRA workshop, participants will investigate energy principles for a model roller coaster. By investigating the motion of the coaster with force meters and photogates, participants will determine the relationship between the potential energy change and speed. Each participant will receive a black line master of student activity sheets used, and a raffle ticket for a chance to win a PASCO ME-8930 Smart Timer. (This workshop is for middle school and ninth grade physical science teachers.)
- Physlets**. *Anne Cox, Eckerd College-- Directors Row 43*
Physlets are free computer simulations for the physics classroom. Workshop participants will learn not only how to find already available curricular resources, but also how modify the simulations as appropriate for their local classroom. Participants are urged to bring their own laptops to the workshop in order to "learn by doing." (This workshop is for high school physics teachers.)
- DC Motor**, *Ed Lee, American Physical Society--Directors Row 44*
Participants disassemble a small dc motor, mount the rotor, power it with a battery, and make it spin by bringing up a magnet. The operation of this model motor produces many observations, which participants explain through further investigation. Each participant will receive a motor and related materials. (This workshop is for high school and middle school teachers.)
- 11:00-11:15** **Break**

- 11:15-12:00 Research Talk--"Stock Car Science: The Physics of Going Fast,"** *Diandra Leslie-Pelecky, University of Texas at Dallas*
Experience NASCAR® race shops, the garage, and the track to find out how to make physics relevant to anyone who drives a car. How cars generate grip (and consequently how fast they can take turns), how drivers use aerodynamics as strategy, why two cars can travel faster together than either one can alone, and why "setting up" a car is the ultimate example of the scientific method will be covered, as well as ideas on how to incorporate motorsports examples into your classroom.
- 12:00-1:00 Lunch** – An opportunity to network with other physics teachers.
- 1:00-1:15 Announcements,** *Jessica Clark and Ed Lee, APS*
- 1:15-2:45 Workshops –**
- Simple Machines and Conservation of Energy,** *David Taylor and Valerie Michael--*
Main room
During this AAPT/PTRA workshop, participants will construct pulley systems and inclined planes. Through measurements of forces and distances, participants will investigate efficiency and conservation of energy. Each participant will receive a black line master of student activity sheets used, and a raffle ticket for a chance to win a PASCO ME-8930 Smart Timer. (This workshop is for middle school and ninth grade physical science teachers.)
- Diffraction,** *Monica Plisch, American Physical Society--*Directors Row 43
Participants will investigate diffraction by shining red laser light at a variety of objects, including a diffraction grating, a CD-ROM, a DVD, wire cloth, and human hair. Comparison of the diffraction patterns produced will help establish the proportional relationship between the size of the pattern or object and the width of the pattern produced. (This workshop is for high school physics teachers.)
- Building Intuition about DC Circuits through Qualitative Experiments,**
*Gary White, American Institute of Physics/Society of Physics Students--*Directors Row 44
Participants will construct circuits with batteries and bulbs to explore the difference between series and parallel circuits. Next, the participants will add a one-farad capacitor to the circuit to explore energy storage and energy changes. Each participant will receive a kit of workshop materials and references for teaching and learning about circuits. (This workshop is for high school and middle school teachers.)

When the afternoon workshop is finished, please fill out the rest of the Evaluation Form and leave it on the registration desk, along with your plastic badgeholder.

Please note that we will have to vacate the main room as soon as Teachers' Day ends.