

Spring 2010 TSAAPT WORKSHOPS

University of Texas and Austin Community College – Austin, TX

March 19-20, 2010

FRIDAY AM

W1 “New Ideas for Teaching Physics: Part I”, presented by Karen Jo Matsler, PTRA/AAPT

If you are teaching physics for the first time or even if you are a veteran teacher, it is always good to look at new activities or renew ideas to inspire your students. Activities presented in this workshop will include methods for figuring physics, gaining just a little momentum, collisions, toying around with impulse and inverse square relationships. Each activity will be presented in a lesson cycle format, which can be easily transitioned into your classroom.

Limited to 24 participants – 2 hours – Cost \$5.00

FRIDAY PM

W2 “Physics Laboratory Measurements Workshop Based on LabVIEW and NI ELVIS”, presented by Sandra Tso, NI, Austin

This hands-on workshop will explore the blended approach of using National Instruments' LabVIEW graphical programming language with computer-based data acquisition devices like the NI ELVIS, to explore modern experimental physics in demonstration experiments and student labs. Learn how LabVIEW can be used to deliver a project-based approach to teaching physics; and how NI ELVIS with a suite of 12 instruments (oscilloscope, function generator, digital multimeter, power supply and more) integrated into a small form factor to provide a hands-on learning system. You will walk away from this workshop with a high-level understanding of LabVIEW's application to physics for teaching and research, the basics of how LabVIEW and NI ELVIS work together, and working knowledge of using NI ELVIS soft front panels to make measurements.

Limited to 18 participants – 3 hours – Cost \$2.00

W3 “5 Pre-Lab and Lab Activities for Newtonian Mechanics” presented by James Mangold.

Key to success of a lab activity is the student's prerequisite skills. This workshop focuses on 5 pre-lab white board activities with corresponding lab activities in Newtonian mechanics utilizing the GMLAD. The activities will cover projectile motion; kinematics, Newton's 2nd Law, Determination of Friction and its Coefficient, Conservation of Energy, Determination of the Spring Constant, and Conservation of Momentum in 2 Dimensions.

Limited to 24 participants – 2 hours – Cost \$5.00

W4 “New Ideas for Teaching Physics: Part II”, presented by Karen Jo Matsler, PTRA/AAPT.

Part II, the sequel, is designed to look at some physics topics that you might encounter during second semester. Some of the activities presented in this workshop will include a different look at methods for student involvement in demonstrating physics, vibrations and waves with earth applications, sound, resonance, and interference patterns.

Limited to 24 participants – 2 hours – Cost \$5.00

SATURDAY AM

- W5 “Radiation and Health: A Workshop for Science Educators”** presented Kenneth V. Krieger, South Texas Chapter of the Health Physics Society.

This workshop covers nuclear science and technology suitable for science teachers to use in grades 4-12. Topics included are Fundamentals of Radiation, exposure to natural and made Radiation, Cellular Biology and Radiation Effects, Radioactive Waste Management, Health Physics and Radiation Physics, and Career possibilities in Nuclear Technology. Schools of participants will receive a working Geiger counter. Workshop presenter is a TEA-approved CPE Provider.

Limited to 20 participants – 3 hours – Cost \$2.00

- W6 “Robotics Workshop for High School and College Instructors”** presented Kathy Holberg, NView Education, and Peggy Reimers, Bastrop ISD.

Twenty-first century learner’s need critical thinking and effective communications skills, practicing higher-level cognitive skills are fun and engaging for students and teachers using LEGO Robotics. Come delve into the latest robotics technology from LEGO Education. Participants will construct and program robots with the new Technic Building System and NXT-G programming software. Attendees will take back instructional strategies and ideas on how to implement robotics into their classroom, school or district. Come; connect, explore, learn, enhance and have fun.

Limited to 18 participants – 3 hours – Cost \$2.00

- W7 “ASTRO 101”**, presented by Dr. W. Lee Powell Jr., Texas Lutheran University.

The NASA CAE presents workshops on teaching Astro 101 classes. They emphasize research based best-practice techniques for interactive engagement. In this local CAE workshop I will spend some time covering the main techniques of interactive engagement as I practice them, and provide some materials to make it easier to adopt the methods in your classroom. Time will be put aside to allow participants to exchange their favorite ideas that improve the teaching of Astro 101.

Limited to 24 participants – 4 hours – Cost \$5.00