

Spring 2014 TSAAPT WORKSHOPS
Abilene Christian University – Abilene, TX
March 21-22, 2014

FRIDAY AM

W1 “**Teaching Kinematics and Dynamics with iOS Devices, Part I**” presented by Michael Strange, Kennedale High School, Kennedale, TX

Using iOS devices in the classroom is engaging to the students and some apps can be effective and efficient for formative assessment. This hands-on session will give you ideas on how to use apps in your class and will give you time to work through labs and apps we have used in our physics classes to find velocity, acceleration, and force. Bring your own iOS device or use one of ours, but you do not want to miss this session.

Limited to 24 participants – 2.0 hours – Cost \$2.00

W2 “**Engagement Activities in Introductory Physics**”, presented by Stephanie Ingle, Kingwood High School, Houston, TX

Engage your students from the very beginning. Activities designed to capture student interest will be demonstrated. These activities provide a common experience to all students so that teachers can build on them throughout the unit. Most activities are quick, hands-on, and fun. Play “inertia ball”, experience action–reaction, and see a flying pig, to name just a few. Topics will include Motion & Forces, Energy, Momentum & Impulse, and Circuits.

Limited to 24 participants – 2.0 hours – Cost \$2.00

FRIDAY Early PM

W3 “**Tipers and Ranking Tasks for High School Teachers**”, presented by Trina Cannon, Gilliam Collegiate Academy, TX

With all of the Ranking Tasks and TIPERs we have had for first year physics in college, we now have TIPERs for high school. This is brand new and hot off the press. Come and learn to use this for your high school physics class. See the variety of ways to check for learning and conceptual understanding. Leave with your own copy. At last Physics Education Research that applies to high schools.

Limited to 24 participants – 1.5 hours – Cost \$2.00

W4 “**Teaching Waves, Sound and Light with iOS Devices, Part II**” presented by Michael Strange, Kennedale High School, Kennedale, TX

Using iOS devices in the classroom is engaging to the students and some apps can be effective for formative assessment. This hands-on session will give you ideas on how to use apps in your class and will give you time to work through labs and apps we have used in our physics classes to learn about waves, sound, and light. Bring your own iOS device or use one of ours, but you do not want to miss this session.

Limited to 24 participants – 2.0 hours – Cost \$2.00

FRIDAY Later PM

W5 “**Video Analysis in the Introductory Physics Lab**”, presented by Tom O’Kuma and Regina Barrera, Lee College and Stephanie Ingle, Kingwood High School, Houston, TX

Video Analysis has been around for many years with. In this workshop, you will get to do both video capture, both regular speed (30 fps) and high speed (up to 210 fps), and video analysis, using LoggerPro and Tracker software. You will get to do activities for both mechanics and physical optics. Handouts will be provided with various other video analysis activities.

Limited to 24 participants – 2 hours – Cost \$2.00

W6 “**To “B” or not to “B” → NOT 2 “B”!**”, presented by Mark Kinsey, Willaim P. Clements High School, Fort Bend ISD

The AP Physics B Exam will no longer exist after May, 2014! It is being replaced with two new exams called AP Physics 1 and AP Physics 2. Participants will examine the new framework

for AP Physics 1 & 2 and develop strategies to help students be successful on these new exams. The latest updates and the most current resources will be discussed and distributed.

Limited to 24 participants – 2 hours – Cost \$2.00

W7 “Get to work! – The Careers Toolbox for Physics Students”, presented by Toni Sauncy, Society of Physics Students and Sigma Pi Sigma (American Institute of Physics)

On average, 40% of all physics majors opt to enter the workforce after graduation, but the default focus of many departments is on preparing students for grad school. AIP undertook an NSF-funded research effort to understand, compile and disseminate effective practices for preparing undergraduate physics students to enter the STEM workforce upon graduation. The project entailed site visits to eight schools with strong records of students entering STEM fields and examination of widely available and generalized career resources. We have identified a set of curricular and extracurricular common features that may improve efforts to recruit and retain students and transition students into the workforce and developed a robust set of insightful resources for students. In this workshop students (and mentors) will work through a set of custom tailored career tools, including networking techniques, interviewing and job hunting techniques with the heart of the work focused on a careful assessment of knowledge and skills and developing an effective, skills-based resume.

Students will take home resource materials and other career building tools.

Limited to 50 participants – 2 hours – Cost \$0.00

SATURDAY AM

W8 “Flipping the Physics Classroom”, presented by Trina Cannon, Gilliam Collegiate Academy, TX

Science textbook adoption has kept us busy. We have to make some changes and adaptation. Why not try flipping the classroom with new materials. With one-line test books, come see how this can be done. I will use a text designed for this very purpose. Come try it out and take home some new ideas. Some extras will be given to the attendees.

Limited to 24 participants – 1.5 hours – Cost \$2.00

W9 “The “Bohring” Atom & The Energetic Photon”, presented by Mark Kinsey, William P. Clements High School, Fort Bend ISD

Participants will examine the models of the atom and Einstein's explanation of the photoelectric effect in order to develop strategies for solving problems in this content area. The participants will also perform a lab using LED's to determine Planck's constant..

Limited to 24 participants – 2 hours – Cost \$2.00

W10 “Untangling Science and Engineering Practices”. presented by Karen Jo Matsler, UT Arlington and PTRA and Evelyn Restivo, Waxahachie Early College High School and PTRA

Students need to APPLY physics concepts as they engage in STEM practices. The practice of science is familiar to science educators, but the new twist is that the practice should describe student work, including engineering. This workshop will engage participants in exploring engineering design and comparing it with scientific inquiry as we untangle the web of STEM in order to clarify its components. Appropriate for all grade levels.

Limited to 24 participants – 2 hours – Cost \$2.00

W11 “Resistance if Futile”. presented by Regina Barrera, Lee College and Stephanie Ingle, Kingwood High School with Brian Lamore and Tom O’Kuma

Whenever you look into your cabinets, have you ever wonder what the heck is this and what am I going to do with it? This workshop will be about two items that you might have. One is the resistance board that has four to five coils of wire that is miced by different lengths, different diameters (gauge), or even different alloys. Another is the primary-secondary coil with a core that can have a rod inside. We will show you what hyou can do in the lab using a data acquisition and computer to relate some physics topics (resistivity or Ohm’s Law and transformers) to your students. No data acquisition equipment? No problem. We will show you how you can do this with a multi-meter and graph paper or even a spreadsheet.

Limited to 24 participants – 2 hours – Cost \$2.00