American
Association of
Physics
Teachers

Northern California and Northern Nevada Section

Spring Meeting

Friday, April 26, 2013
Saturday, April 27, 2013

Foothill College

Los Altos Hills, CA 94022

Local Host: Sarah Parikh

email: parikhsarah@foothill.edu

650-949-7748

~ Friday Evening Social ~

6:30PM No-Host Dining

First & Main Restaurant

937 Main St, Los Altos 94022

Please for dinner RSVP at our website by April 25 so we have an accurate seat count

~ Friday Night Activities~

8 PM Physics Show
Foothill College - Room 5015

A presentation of Foothill's Physics show, an event that has entertained and educated tens of thousands of local elementary-school-aged children since 2007.

9:30 PM See the Stars
Foothill College - Observatory

Our observatory is open for viewing on Friday nights, astronomy is looking up! The Peninsula Astronomical Society will host a night of telescopes, featuring our 16-inch Schmidt-Cassegrain.

REGISTRATION - *What a deal!*

$20 for NCNAAPT members (includes lunch), Free for first-time attendees and students (Lunch tickets will be available for $10.)
A bargain at twice the price!

Please pre-register at www.NCNAAPT.org/register

We will distribute a group photo documenting attendance for any teacher who needs one for their district/professional development purposes.

~ Program ~

SATURDAY, April 27, 2013

Morning Session Room 5015

8:00 Registration, Coffee, & Breakfast Food

8:45 Welcome and Announcements

8:55 Show & Tell

Share your favorite demonstration or teaching tip. Since new teachers and section members will be at this meeting, you are encouraged to dust off some of your oldies but goodies. If you have handouts, please bring 75 copies. *Time limit is 5 minutes per person or you risk the dreaded GONG by referee David Kagan!*

9:55 Break

10:00 Invited Talk: "Changes in the Teaching of Introductory Physics at Stanford"

Chaya Nanavati

Stanford University, nanavati@stanford.edu

Five years ago the Physics department at Stanford decided to revamp the way its introductory Physics classes were taught. We decided to adopt strategies that focused on student learning and that had been tested by the Physics Education Research community. We went from a passive, instructor-at-the-whiteboard classroom to an active, student-centered classroom. I will discuss the challenges we faced and how we got buy-in from all the parties involved -- instructors, teaching assistants, and students. I will specifically address our lab classes and changes in our philosophy on lab; and will also talk about specific changes that can be implemented in smaller classes (50 or fewer students) to build an interactive classroom.

10:55 Break

11:00 Invited Talk: "Maximizing Student and Teacher! - Success with Online Homework Systems"

Scott Hildreth

Chabot College, shildreth@chabotcollege.edu

We know that online homework systems can save us grading time, and help some students by providing immediate feedback for incorrect answers. But can we use those systems for more than just homework? How can we identify and deal with students copying rather than authentically doing the problems? Has using an online HW system resulted in measurable improvements in student learning, or retention?

Scott will share tips and techniques, caveats and pitfalls, and discuss the future of online homework systems as multimedia content, tailored content delivery, and access platforms all continue to evolve.

11:55 Group Photo

PSEC Quad

12:00 Lunch w/Topic Tables

PSEC Quad

Sit with old friends, new friends or at a topic table. Possible topic tables: AP Physics, Physics First, Rookie Teachers, Two Year Colleges, Next Generation Science Standards, and/or Labs.

1:00— Business Meeting / PSEC Tours

Attend the annual business meeting in Room 5015 or explore Foothill's brand new Physical Sciences / Engineering complex!

1:35 Raffle in Room 5015

1:45 The Next Generation Science Standards: What's Next?

Carolyn Holcroft[1] and Rick Pomeroy[2]

[1]Foothill College Biology, holcroftcarolyn@foothill.edu

[2]UC Davis School of Education, jrpomeroy@ucdavis.edu

In 2011, the National Research Council released the "*Framework for K-12 Science Education,*" which served as the guiding document for the recently released Next Generation Science Standards. Please join us for a very brief explanation of the development process and an overview of next steps as California and Nevada move towards implementation of new standards. We'll talk about the philosophical underpinnings of the NGSS, how they might affect your physics classroom, and what you can do now to prepare for the transition.

2:40 Break

2:45 "The History of Physics Symbols"

James Lincoln

Tarbut V' Torah HS, LincolnPhysics@gmail.com

Why do we use h for Planck's constant, or I for current? What does the "a" in $\Sigma F=ma$ really stand for? Who decided, and when, to use c for the speed of light? I have done some historical research on several symbols and constants, tracking down when they first appeared in literature and what they actually stand for. The results have been enlightening and that they will help both teachers and students understand the meaning behind the choice for the symbols we use.

3:00 "Teaching physics to 7-8th graders in Middle School"

Ron Qian

Ralston Middle School, rqian@brssd.org

Prompted by an ABC news report on "Wake-up Call", a proposal was made to Ralston Middle School Administrators to set up a pilot program for teaching physics, as they do in high-achieving countries such as Finland, Taiwan, China, and etc. This presentation addresses main challenges in teaching physics to middle school students. It also shares special ways to overcome those challenges (making no-assumption, concept clustering, just-in-time math crash course, modeling instructions, multiple approaches in problem solving). At the end, students' cognitive achievement and affective domain positioning will be presented.

3:15 "What Stanford Can Offer Physics Teachers"

Kaye Storm

Stanford Office of Science Outreach, kstorm@stanford.edu

This informal presentation will discuss programs at Stanford for physics teachers and their students and suggest ways to link up with physics researchers to enhance your teaching and learning.

3:30 "EinsteinPlus"

Tom Woosnam

Crystal Springs Upland School, twoos@csus.org

A report on the one week teachers' workshop I did at the Perimeter Institute in Waterloo, Ontario. The resources I came away with were first class and I'll show you where to download them.

3:45 Project-Based Learning

Foothill College Science & Engineering Association

Foothill College, foothill.sea@gmail.com

One of the main goals of FoothillSEA is to help students gain deeper understanding of scientific principles through practical applications. We take advantage of the students' natural curiosity and their desire to build things, and the projects we work on bring relevance to their study in science and technology. The 3D printer and the Quadropcopter the club built exposed students various subjects—such as microcontroller technology, programming, materials, design/manufacturing/fabrication, control theory, systems engineering, fluid dynamics—all leading to explain how the machines we build works and why those subjects matter.

4:00 "Some Statistics of Popping Corn"

Bernard Cleyet

UCSC, retired, bernard@cleyet.org

Being physicists, many of us use apparatuses not in their intended manner. I will describe the use of a precision horological timer to

Attention New Physics Teachers! PTSOS is here to help you!

PTSOS is an NCN-AAPT-sponsored project funded by a donation from the Karl Brown Foundation that assists physics teachers in their vulnerable first years of teaching. **PTSOS has expanded** and now offers two sets of three workshops; one at Los Gatos High School hosted by **Dan Burns, Paul Robinson**, and **Stephanie Finander**, and the other at Rio Americano High School hosted by **Dean Baird** and **Steve Keith**.. New teachers should email Stephanie Finander at **sfinander@sbcglobal.net** for more information on how to get signed up.

collect statistical popping corn data and their subsequent analysis. My analysis will show that popping corn observes the Poisson interval distribution, as do the well known other events such as radio-active decay, falling rain drops, vehicle and photon arrivals, and horse kick deaths in the Prussian Army.

4:15 "Radical Physics: A Novel Online Introduction"

Tucker Hiatt

Wonderfest & Stanford University, thiatt@stanford.edu

According to the AIP, two-thirds of U.S. students never take a year-long physics course. Radical Physics offers the essence of an introductory course -- online and for free -- that will appeal to a sizable portion of the un-physicsed two-thirds. It will also help full-year students who want a second view of essential material. Radical Physics, created by the nonprofit WONDERFEST, offers several improvements over the Khan Academy model: (1) its principal instructor has 35 years of experience; (2) it promotes use of the PhET online laboratory simulations; (3) it references the free online "College Physics" text by OpenStax; (4) it has a look-you-in-the-eye "talking head" format that draws the viewer in -- as television news has been able to do for over fifty years. Radical Physics viewers also benefit from on-screen demos with PASCO equipment, from occasional interviews with Stanford and UC Berkeley experts, and from critical analysis of compelling action movie scenes.

4:30 Close

American Association of Physics Teachers

Northern California/Northern Nevada Section

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All Positions Are Open!
Job Descriptions at http://ncnaapt.org/officers
Elections will be held at the Spring Meeting.

If you wish to run send email to
marascodavid@foothill.edu

~ Hotel Information ~

We are recommending the Super 8 in Mountain View: http://www.s8mountainview.com/

Book ahead for $89.99 a night. The hotel is 3.3 miles from the campus. Go north on El Camino, take a quick left on El Monte, and you are at our doorstep!

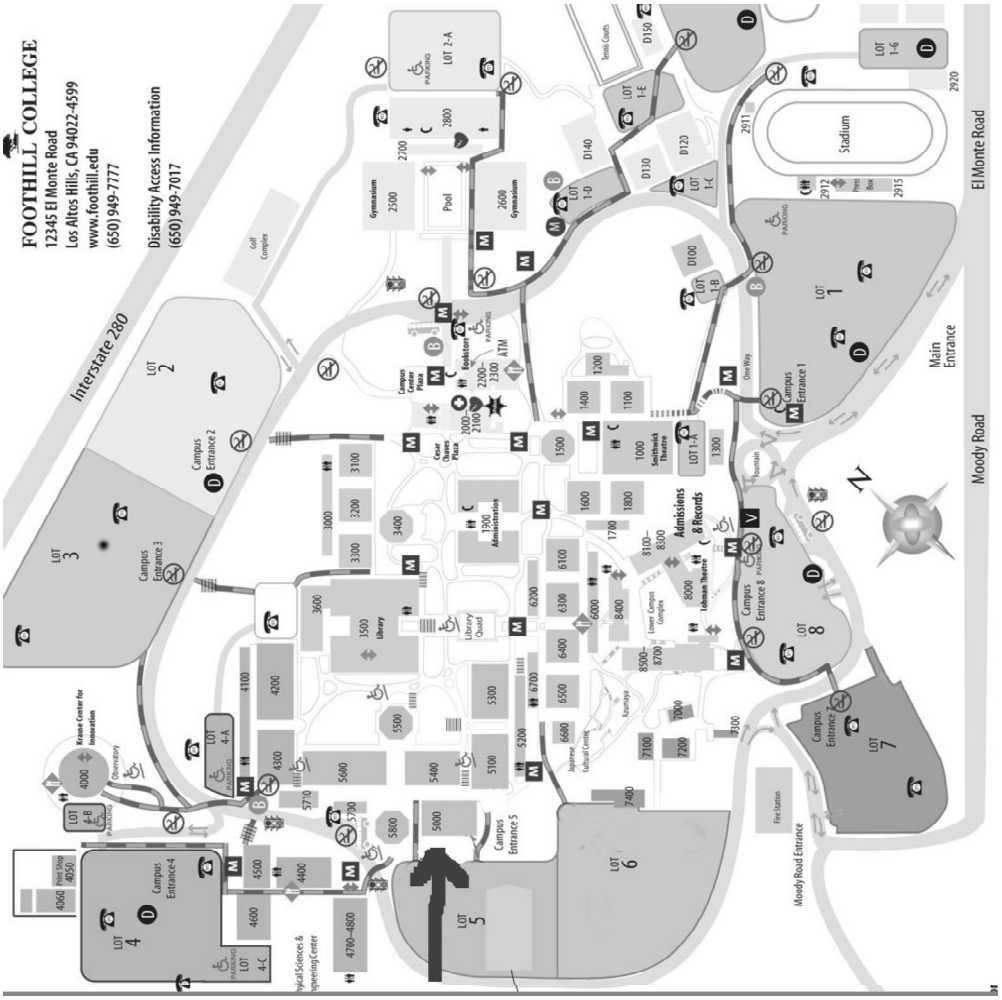
~ The Future? ~

We are looking for sites for our Fall and Spring meetings next year. You provide a meeting place and local support, the officers do most of the rest. It will impresses administration. If you are willing, drop us an email at marascodavid@foothill.edu

~ Do You Know These People? ~

Somehow registration forms for the following people were misplaced after our Fall Meeting. We do not have mailing addresses for them. Any help in contacting them would be greatly appreciated. Information should be sent to Dennis Buckley (buckleydennis@hotmail.com)

Sherry Brown
Yalon Shung
Hanna Seidler
Scott Pennington
Ingrid Neuman
Yibo Zhang



~ Directions to Foothill College Physics ~

Foothill College is located in the foothills of the beautiful town of Los Altos, which is situated about halfway between Redwood City and San Jose. Take the El Monte West exit off of I-280—you're there--it's that simple! For more information: http://foothill.edu/news/transportation.php

~ Parking ~

Parking is $3 a day, they will ticket! The permit machines take bills and coins. The main road into campus goes down a hill. At the bottom traffic takes a right-hand turn. Keep following the road to Parking Lot 5, look for signs. Park in Lot 5 or Lot 6.

Dennis Buckley
P O Box 735
Brentwood, CA 94513

It’s not a myth!
Everyone loves
the demo show!

Attention: Physics Staff
Address Correction Requested