

Hi everyone! It was great to see so many of you at the demo show at Sun Valley this past Friday night! I know that travel on Friday was difficult, between the traffic and the weather, and we appreciated your effort in coming out and helping us make it a great and informative evening! (Thank you again, Marc, for hosting!)

I took notes on the demonstrations and will be writing up something for the website shortly. If you have pictures you'd like to share with the chapter (and perhaps the world through our website, if you're willing), we'd love it if you could send us a copy. Pictures can be sent to me at jwaldman@archmereacademy.com, and I'll see that they end up with our webmaster if you want them to go online.

Our treasurer, Art Zadrozny, was able to collect registration fees and annual dues in person at the demo show, from the thirty or so people who attended. He asks me to pass on a note to the membership indicating that food for dinner was ordered based on registration numbers, but some of those who registered were unable to attend and therefore did not pay. If you registered for dinner but were unable to attend due to weather or other conflicts, please help us keep the Treasury whole by sending our treasurer a check for the cost of dinner.

Checks should be made payable to "SEPS AAPT", and mailed to:

c/o Art Zadrozny
16 Painters Lane
Chesterbrook, PA 19087

If you haven't paid this year's annual \$10 SEPS dues and would like to continue to support the work of our local AAPT chapter, Art would also be overjoyed to collect those from you as well, regardless of whether you attended (or planned to attend) the demo show.

The SEPS officers met briefly on Friday night before dinner. The primary order of business is setting a date, location, and theme for our Spring 2014 meeting, which is slated to take place at an area college of university. Last year the theme was "Communicating Physics", and we brought in speakers to talk about communicating physics to lawmakers through lobbying, and to the general public through blogs and outreach performances. If you have any ideas about cool themes for our upcoming meeting, please forward them to me ([jwaldman -at- archmereacademy.com](mailto:jwaldman-at-archmereacademy.com)) or to our president, Paula Miller ([pjmiller4 -at- comcast.net](mailto:pjmiller4-at-comcast.net); note the updated address).

Here's the list of the remaining contents of this newsletter:

1. Short-term job opening for Biology Teacher at West Deptford HS in NJ (start date 11/9)
2. NASA's Cassini Scientist for a Day Essay Contest (deadline 10/25)
3. Free Educators' Night out at the Franklin Institute (Wednesday 11/13)
4. Save the dates for Penn's 2014 Physics Demo Show (1/13 & 1/14)
5. La Salle Workshops for Physics Teachers: Please complete interest survey! (survey deadline 10/21)
6. Penn Outreach Lectures at LRSM (next lecture 10/17 on protein structure and interaction,

preceded by tour of nanotech building)

7. Free Science Saturday open lectures at Princeton (starting in January)
8. Free field trips and professional development workshops at the NASTAR Center
9. Do you need Force Tables? Art Zadrozny wants to give you some!
10. Nobel Prize in Physics awarded to Peter Higgs and Francois Englert; Free Higgs resources from AAPT
11. NASA Exploration Design Challenge (deadline 3/14/14)
12. Save the date for CSAAPT's Fall 2013 Meeting (11/8-9)
14. Cool physics links: Dog Goldberg Machine, MIT science MMO, Bohemian Gravity, Creating a Star on Earth, Secondary Education: The Action Flick.
15. SEPS AAPT Online

Please continue to let me know about any exciting events, professional development opportunities, or resources you come across that you'd like to share with the rest of the Southeastern PA Section! I'm especially interested in getting more resources that will be useful to college faculty, since most of the mailing lists I am personally on pertain to my own grade level, and I'd like this list to be useful for everybody on it.

And as always, please let me know by email (jwaldman -at- archmereacademy.com) if you would like me to change your subscription, or if you have friends or colleagues who would like to be added.

Best,

Jillian Waldman
Secretary, SEPS AAPT
Science Teacher
Archmere Academy
Claymont, DE 19703

1. SHORT-TERM JOB OPENING FOR BIOLOGY TEACHER AT WEST DEPTFORD HIGH SCHOOL IN NJ

West Deptford High School in Gloucester County, NJ is seeking a NJ Certified Teacher of Biology to substitute from November 9th through January 31st with the possibility of an earlier start date. The candidate will teach 2 sections of Biology and 3 sections of Honors Biology. For more information, access the school website at <http://www.wdeptford.k12.nj.us/districtweb/jobs.aspx> or email Mike Pustie at mpustie -at- wdeptford.k12.nj.us.

2. NASA'S 2013 CASSINI SCIENTIST FOR A DAY ESSAY CONTEST

2013 Cassini Scientist for a Day Essay Contest

Audience: Students Grades 5-12

Entry Deadline: Oct. 25, 2013

The contest is open to all students in the United States in grades 5-12. The essays will be divided into three groups for scoring: grades 5-6, 7-8 and 9-12. All submissions must be students' original work. Participants may enter as individuals or as part of a team of up to four students.

The deadline for entries is Oct. 25, 2013 .

For more information, visit <http://saturn.jpl.nasa.gov/scientistforaday/> .

(Yes, the website is still up despite the shutdown, although NASA cannot answer your questions right now.)

3. FREE EDUCATORS' NIGHT OUT AT THE FRANKLIN INSTITUTE NOVEMBER 13TH

You're Invited! Educators' Night Out - See One Day in Pompeii

Wednesday, November 13, 3:30PM-8:00PM

The Franklin Institute in Philadelphia invites educators to tour the museum and experience first-hand their theater programs, energetic live shows and interactive workshops, and speak with educators and other program providers about the dynamics of your classroom. The highlight of the night will include a tour of One Day in Pompeii, their featured exhibit for the upcoming school year.

The program is free, but registration is required. Register today:

<http://www.fi.edu/educatorsnightout/>

4. SAVE THE DATES FOR PENN'S 2014 PHYSICS DEMO SHOW

The University of Pennsylvania's annual demo show, open to students around the area, is tentatively scheduled for Monday and Tuesday, January 13th and 14th. The topic will definitely be Electricity and Magnetism, and the timing is great for anyone who (like your SEPS secretary) is cramming all of AP Physics C into one year. More information will be published as it is available. For now, if you have questions, please address them to Bill Berner at berner-at-physics.upenn.edu.

5. LA SALLE TO PROVIDE WORKSHOPS FOR PHYSICS TEACHERS: PLEASE COMPLETE INTEREST SURVEY!

La Salle University in Philadelphia plans to provide a series of workshops for physics teachers, in conjunction with SEPS AAPT. In order to make sure that workshop topics and scheduling are as useful and accessible as possible to you, we ask that anyone who might be interested in attending complete La Salle's interest survey. Additional questions or comments about the program should be addressed to Ling Liang in La Salle's Department of Education at lian-at-lasalle.edu.

Survey results will be tabulated Monday, October 21st, so please be sure to complete the survey by then!

<https://www.surveymonkey.com/s/H7VQCVW>

6. PENN OUTREACH LECTURES AT THE LAB FOR RESEARCH ON THE STRUCTURE OF MATTER (LRSM)

Since 1994, the LRSM has presented a monthly series of materials-based lectures during the school year to science teachers. These are given by faculty and staff associated with the LRSM. The lectures are free, generally take place on Thursday evenings at 5:30 pm and are followed by food and refreshments during which teachers can engage the speaker in conversation about the talk or other aspects of education. Teachers can also receive Act 48 credit. All talks take place at LRSM, 3231 Walnut Street, Philadelphia.

The second lecture of the 2013-2014 series will be given at 6:00 PM (note time change) by Prof. Amish Patel, Chemical and Biomolecular Engineering, on Thursday, October 17 in the Reading Room, LRSM, on "Building a bridge from Protein Structure to Protein Interaction." Please invite a colleague or a good student who may be

interested. As always, parking is on-street, Pay and Display, and pizza and refreshments will be provided after the talk.

The talk will be preceded at 5:30 by a tour of Penn's new Singh Center for Nanotechnology, an architecturally fascinating glass structure designed so that visitors can see what's going on inside the labs without having to suit up for the clean rooms.

More information is available at the link below. If you are interested in attending, please contact Andrew R. McGhie at 215-898-6461 or at mcghie -at- lrsm.upenn.edu.

<http://www.lrsm.upenn.edu/outreach/teachers.html>

7. FREE SCIENCE SATURDAY OPEN LECTURES JANUARY-MARCH AT PRINCETON'S PLASMA PHYSICS LAB

Science on Saturday is a series of lectures given by scientists, mathematicians, and other professionals involved in cutting-edge research. Held on Saturday mornings throughout winter, the lectures are geared toward high school students. The program draws more than 300 students, teachers, parents, and community members each Saturday. Topics are selected from a variety of disciplines.

The program runs January through March, and is free and open to the public. NO REGISTRATION IS REQUIRED to attend the lectures; however, a valid, government issued, photo ID is necessary to gain access to the Laboratory for anyone over 18 years of age.

Lectures begin promptly at 9:30 AM, but attendees are advised to show up early to make sure they can actually get a seat. Free breakfast is provided before the lectures.

More information here: <http://science-education.pppl.gov/SOS/Overview.html>

8. FREE FIELD TRIPS AND PROFESSIONAL DEVELOPMENT WORKSHOPS AT THE NASTAR CENTER

The NASTAR CENTER -- ETC's National Aerospace Training and Research Center, is the premier air and space training, research, and education facility in the world. It is located in Southampton, PA, which Google tells me is a 35-minute drive north from Center City, Philadelphia. The NASTAR Center's Education Programs offer unique, hands-on learning experiences for K-12 Students, Educators, and the General Public in an authentic aviation and space training environment. Programs incorporate STEM (Science, Technology, Engineering, and Math) education objectives with fun, inspiring, and engaging activities centered on the worlds of aviation and space.

They offer field trips and scout programs geared towards PA academic science standards, as well as summer workshops for teachers. (The students will be disappointed to learn they don't get to play in the centrifuges; I'm not sure if the teacher workshops are more interactive.) For more information or to schedule a Teacher Orientation and check out the facilities before planning a trip, check out their website at:

<http://www.nastarcenter.com/education>

9. DO YOU WANT FREE FORCE TABLES? ART ZADROZNY WANTS TO GIVE YOU SOME!

Art Zadrozny has the following surplus equipment which is looking for a new home: 12 force tables with spring scales. If interested contact ArtZadrozny -at- gmail.com



10. NOBEL PRIZE AWARDED TO PETER HIGGS AND FRANCOIS ENGLERT; FREE HIGGS RESOURCES FROM AAPT

The 2013 Nobel Prize has been presented for "the theoretical discovery of a mechanism that contributes to our understanding of the origin of mass of subatomic particles, which recently was confirmed through the discovery of the predicted fundamental particle, by the ATLAS and CMS experiments at CERN's Large Hadron Collider."

AAPT is proud to share a new resource, *Higgs Articles from AJP and TPT*, featuring information published in *American Journal of Physics* and *The Physics Teacher*. The link is also available on our website (aapt.org).

As a member society in the American Institute of Physics (AIP), AAPT also wants you to know about the 2013 Nobel Prize resources published on the AIP Website at <http://www.aip.org/nobel/physics2013.html>.

And the New York Times has published a very attractive interactive piece on the Higgs Boson in which your SEPS secretary only noticed one glaring error: <http://www.nytimes.com/interactive/2013/10/08/science/the-higgs-boson.html>

11. NASA EXPLORATION DESIGN CHALLENGE

Audience: K-12 Educators and Students

Virtual Crew Registration Deadline: March 14, 2014

Students from Kindergarten through 12th grade will have the opportunity to play a unique role in the future of human spaceflight through participation in NASA's Exploration Design Challenge, or EDC. NASA EDC invites students around the world to think and act like scientists in order to overcome one of the major hurdles of deep space long-duration exploration -- the dangers associated with space radiation. Students taking part in the challenge will discover how to plan and design improved radiation shielding aboard the Orion Multi-Purpose Crew Vehicle, currently being developed by NASA, Lockheed Martin and other partners to carry astronauts to space, venturing farther than humans have ever gone before.

Through a series of science, technology, engineering and mathematics, or STEM, engagement activities, students in grades K-8 will analyze different materials that simulate space radiation shielding and recommend materials that best block radiation and protect astronauts. Students in grades 9-12 will think and act like engineers as they apply what they learn to design shielding to protect a sensor on the Orion crew module from space radiation. After a review of the design solutions submitted by teams in the grades 9-12 challenge, five finalist teams will be selected and matched with a mentor from NASA to test their designs in a virtual simulator. The winning team will build a prototype radiation shield that will be analyzed and submitted to Lockheed Martin for flight certification on the inaugural flight of the Orion Exploration Flight Test, or EFT-1.

The five U.S. finalist teams from the grades 9-12 challenge will be invited to attend the EFT-1 launch, currently scheduled for November 2014. The names of all students, grades K-12, participating in the NASA EDC will fly aboard the spacecraft as honorary virtual crewmembers for Orion's first flight. The deadline to register students for the virtual crew is March 14, 2014.

For more information and to register online, visit <http://www.nasa.gov/education/edc>. For more information about Orion, visit <http://www.nasa.gov/orion>. Email any questions about this opportunity to [nasaedc -at- nianet.org](mailto:nasaedc-at-nianet.org).

12. SAVE THE DATE FOR CSAAPT'S FALL 2013 MEETING

Our southern neighbors in the Chesapeake Section of the AAPT (<http://www.csaapt.org/>) have set the date for their 2013 Fall Meeting. The meeting will be Friday-Saturday, November 8-9, 2013 in Virginia Beach, VA. The local contact will be David Wright ([dwright -at- tcc.edu](mailto:dwright-tcc.edu)) of Tidewater Community College. The conference hotel is the Barclay Towers (809 Atlantic Beach Avenue), right on the oceanfront. To make reservations, call and ask for the AAPT block of rooms. This block will be reserved until about a month prior to the meeting. The price including all taxes will be \$78.97.

Friday's events will include a workshop (topic TBD) and a 3D planetarium show "Dawn of the Space Age" at the Tidewater Community College Planetarium. On Saturday, there have contributed talks and demos, along with a luncheon with a guest speaker.

The contact person for the CSAAPT in general is Dr. Rhett Herman, Professor of Physics at Radford University, and communications officer for the CSAAPT. The Chesapeake Section serves the states of Delaware, Maryland, and Virginia.

13. FORMER SEPS PRESIDENT FRAN POODRY FEATURED IN VERNIER NEWSLETTER

Fran Poodry has left us to work for Vernier in Portland. She's featured on page 4 of the Fall 2013 Vernier Newsletter. There's also some other good stuff in the newsletter, especially for users of Vernier products.

<http://www2.vernier.com/newsletters/fall13.pdf>

14. COOL LINKS

A Youtube Video of a Dog Goldberg Machine by Beneful:

<http://www.youtube.com/embed/AA56LgpFbSw?rel=0>

MIT's Education Arcade releases a new MMO (massively multiplayer online game) whose primary goal is to teach students to think like scientists and mathematicians:

http://blogs.kqed.org/mindshift/2013/08/mit-unleashes-new-online-game-for-math-and-science/?utm_source=dlvr.it&utm_medium=linkedin&goback=%2Egde_3391879_member_269389112#%21

Did you see the awesome a cappella recording a graduate student made about String Theory? To the tune of "Bohemian Rhapsody, here is "Bohemian Gravity":

<http://www.youtube.com/watch?v=2rjbtSx7twc>

Last year at NJAAPT's Spring Meeting, Andrew Zwicker of Princeton's Plasma Physics Lab

gave a great lecture on "Creating a Star on Earth: the Path to Fusion." He told us that his talk was practice for his TEDx talk the next weekend. The video of Dr. Zwicker's TEDx talk is now online here, and should be completely accessible to non-physicists:

http://www.youtube.com/watch?v=PtSJH_UiRdk

A Youtube video called "Secondary Education" integrating science concepts and science fiction plot that describes itself as "a hybrid throwback to the educational after-school specials of the 90's and the Japanese Tokusatsu genre": Three high school students are forced to make up a chemistry test during after school detention. Over the course of the afternoon, they discover that their Chemistry teacher, Eugene Yamamoto, has been leading a secret double life as a crime-fighting Power Ranger. When an escaped mutant lobster shows up in the hallways seeking revenge for his arrest at the hands of Mr. Yamamoto, they must use the science principles from the test that they failed to help him defeat it.

Secondary Education: <http://www.youtube.com/watch?v=jQN-YE5G7lo&feature=youtu.be>

15. SEPS AAPT ONLINE:

For news, upcoming events, and photos of past events, check out the SEPS AAPT web presence online and on Facebook!

Website: <http://www.physics.upenn.edu/~aapt/>

Facebook: <https://www.facebook.com/?ref=logo#!/group.php?gid=166735829132>