

Greetings, fellow physicists and physics teachers!

As the school year begins (or prepares to begin, depending on your schedule), I have just a few things for you.

The most important is an invitation to this year's FALL DEMO SHOW at Sun Valley High School in Aston, PA. This year's will be a demo NIGHT, Friday October 11th 2013. The demo show will begin at 7 PM, preceded by an officers' business meeting, and dinner. The evening time will be ideal for us to watch a FREE PLANETARIUM SHOW in Sun Valley's new planetarium, after we are finished sharing our demos and presentations.

A flyer/registration form and directions to Sun Valley are attached. The planetarium show and demos are free; dinner is \$15.00, and annual SEPS AAPT dues are \$10.00. You're welcome to attend even if you've never attended an AAPT event before -- the demo show is a great way to meet new people and share and collect great teaching ideas. And if you have a demo, a lab, or any other neat instructional idea you'd like to share, we'd love to learn about it -- just fill out the information on the registration form letting us know about it!

Please RSVP by emailing a copy of the registration form to our host, Marc Baron, at [mbaron -at- pdsd.org](mailto:mbaron-at-pdsd.org).

1. Opportunity to playlets Google Play for Education
2. NASA Exploration Design Challenge (deadline 3/14/14)
3. Online Interactive Multivariable Calculus Course (Fall 2013)
4. Online Resources about the International Space Station
5. Aerospace Education Services Project offers free Webinars (June-August)
6. Save the date for CSAAPT's Fall 2013 Meeting (11/8-9)
7. Cool physics links: Star Size Comparison HD, Daniel Russell's vibration simulations, Walking robots, Cassini images
8. 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](mailto: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

1. OPPORTUNITY TO PLAYTEST GOOGLE PLAY FOR EDUCATION

Google is rolling out a new program for schools called Play for Education. The presentation is available at <http://www.youtube.com/watch?v=U5d6SjmU7MI>, but the summary is that Play for Education allows teachers to manage their students tablets en masse, including restricting unwanted content and distributing educational apps. They are currently looking for new schools to use these tools in the next school year. They haven't told us exactly what this would entail, but it's probably free or subsidized software and hardware in exchange for your feedback.

If you or your school are interested, the link to apply is: <http://www.google.com/edu/android/>

2. 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).

3. ONLINE INTERACTIVE MULTIVARIABLE CALCULUS COURSE

David Abineri, an AP Physics teacher, is offering an online Multivariable Calculus course next fall:

Students and Faculty, a **Multivariable Calculus** class is being offered again next year from

September 2013 to May 2014. Ideal for students completing AP Calculus before the senior year and for faculty who might want to brush up on the subject.

This will be an online, totally interactive classroom **NOT just 'watch and work'**. There will be real discussions on all the major topics in such a way as to end up with a deep understanding of the subject.

Please pass on to friends, students and colleagues.

Class size will be limited, first come first served, all details

at: <http://calculusnow.blogspot.com/>

4. ONLINE RESOURCES ABOUT THE INTERNATIONAL SPACE STATION

International Space Station Science: Get up to Speed and in the Know!

As educators you bring the excitement of science and exploration to your students each day in the classroom. But how can you find the latest information about what is taking place aboard the International Space Station, or ISS, especially with all of the science and research taking place every day? Here are five effective ways you can keep current and feel more confident in talking to students about the space station and what is happening in the orbiting laboratory.

1.) Subscribe to the ISS Program Science Listserv. Subscribers receive twice-weekly emails with compelling stories about important space station research conducted each day.

<https://lists.nasa.gov/mailman/listinfo/iss-program-science-group>

2.) Read the information-rich ISS Research and Technology Web page

(<http://www.nasa.gov/iss-science/>) and the engaging ISS research blog, A Lab Aloft

(<http://go.usa.gov/atl>).

3.) Know the ISS research benefits for humanity. Find them at

http://www.nasa.gov/mission_pages/station/research/benefits/.

4.) Follow timely ISS research updates on Twitter (https://twitter.com/ISS_Research) and Facebook (<https://www.facebook.com/ISS>).

5.) Learn how to get research aboard the ISS (or refer those interested)

http://www.nasa.gov/mission_pages/station/research/ops/research_information.html.

Questions about space station research and guidance on where to find additional information should be directed to the ISS Research Helpline at

[jsc-iss-research-helpline -at- mail.nasa.gov](mailto:jsc-iss-research-helpline-at-mail.nasa.gov)

5. AEROSPACE EDUCATION SERVICES PROJECT OFFERS FREE WEBINARS

The Aerospace Education Services Project is presenting a series of free webinars throughout Summer 2013. All webinars can be accessed online. Join aerospace education specialists to learn about activities, lesson plans, educator guides and resources to bring NASA into your classroom. For more information about these webinars, and to see a full list of webinars taking place through August 2013, visit

<http://aesp.psu.edu/programs/webinars/> .

Questions about this series of webinars should be directed to Chris Gamrat at [gamrat -at- psu.edu](mailto:gamrat-at-psu.edu).

6. 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-at-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.

7. COOL LINKS

Nicely rendered video comparing the sizes of objects -- planets, stars, etc -- in our universe:

https://www.youtube.com/embed/XE0aAZE0kp4?feature=player_embedded

Daniel Russell at PSU has a nice set of simulations about modes of vibrations and related concepts here:

www.acs.psu.edu/drussell/Demos/string/fixed.html

Jillian Waldman has been working at the University of Delaware this summer, learning about models for walking. The simplest model for walking is an inverted pendulum, with a mass pivoting around one foot, then switching to pivot around the next foot as it swings down. One of the fun websites she's come across has been this collection of videos of dynamic passive walking from a Japanese university -- robots with no motors that can walk anyway: http://fujimoto.mech.nitech.ac.jp/fujimoto/sano/walk_eng.html

Did the internet tell you to wave at Saturn as the Cassini probe took images? Here's the result, Cassini's photo of the earth:

http://apod.nasa.gov/apod/image/1307/earth_cassinimessenger_1799.jpg

More Cassini images here: http://www.nasa.gov/mission_pages/cassini/main/index.html

8. 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>