

This newsletter is brought to you slightly early by the fact that we had mini-roster night on Thursday and I had three hours at work waiting for everyone's parents to show up. So here are this week's announcements, which have apparently been multiplying like crazy now that the school year is under way:

1. Sign up for SEPS AAPT's Fall Demo Day at Harriton HS (10/27, sign up by 10/20)
2. Register for AAPT PTRA Workshops (11/16/12 at Misericordia, 3/8/13 at Millersville)
3. Opening for part-time astronomy faculty at Rowan University (Glassboro, NJ)
4. Opening for physics teachers at Mastery Charter
5. Opening for physics teacher at Ursuline Academy
6. Random Link of the week: XKCD's "What if?" physics column
7. Army-funded High-School and Undergraduate Apprenticeship Programs accepting applications
8. String Theorist Brian Greene speaking at the Franklin Institute on October 12th (free but reservations required)
9. High school opportunity to design a lunar mission payload (registration begins 10/1/12, submissions due 3/15/13)
10. Grant Opportunity for Fulbright Teacher Exchange (deadline 10/15)
11. Online graduate course on space technology from Montana State
12. 2012 Humans in Space Youth Art Competition (Deadline 10/21/12)
13. SAVE THE DATE for our Joint Spring Meeting with the Society of Physics Students (4/19-4/20, Drexel)
14. Opportunity to submit student climate research to Harvard's JEI (Deadline 11/20)
15. Links: 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'd especially be 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@archmereacademy.com) if you would like me to change your subscription, or if you have friends or colleagues who would like to be added.

Yours to infinity and beyond (or perhaps just in the limit as r approaches infinity),
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1. SIGN UP FOR SEPS AAPT's FALL DEMO DAY AT HARRITON HIGH SCHOOL

Do you have a neat physics demonstration or teaching technique you want to share? Are you an experienced teacher, but still love to learn from your colleagues? Are you a recently-minted physics teacher looking for ideas? Come to SEPS AAPT's Fall Demo Day on Saturday, October 27th! It's fun, free, and pedagogically useful. Spread the word to colleagues at your school or college! (A flyer is attached for your posting convenience.)

Where: Harriton High School, 600 North Ithan Avenue, Rosemont, PA 19010

When: 9:30 AM for Executive Board Meeting (you know who you are); 10:00 AM for FREE BREAKFAST and chat; 11:00 AM - 1:00 PM for DEMOS

We ask that you please register by emailing Bob Schwartz at schwarr -at- lmsd.org by October 20th if you plan to attend, so that we can be sure to bring enough breakfast for everyone. SEPS AAPT annual dues of \$10/person/year will also be collected at the meeting, for those who have not paid within the past year.

2. SIGN UPS OPEN FOR AAPT PTRS WORKSHOPS (11/16/12 and 3/8/13)

Each year the Central PA Section of AAPT offers two workshops primarily aimed at high school teachers. This year's fall workshop is themed around Kinematic Measurement and scheduled for Friday, November 16 at Misericordia University (near Wilkes-Barre). The spring workshop is scheduled for Friday, March 8 at Millersville University (near Lancaster). Copies of the announcements for the workshops are attached, with further details, registration information, and contact information for the coordinators. Please post and share the announcements, and sign up for the workshops!

3. OPENING FOR PART-TIME ASTRONOMY FACULTY AT ROWAN UNIVERSITY

Job Posting: Adjunct Position, Department of Physics & Astronomy, Rowan University, Glassboro, NJ.

Description: We anticipate a position to teach physics to non-science majors in Spring 2013. Instructor will be responsible for teaching both lecture and laboratory sections. Evening or Day schedule possible. Pay: \$6000.

Qualifications: Ph.D. in Physics or related discipline is preferred, but M.S. in Physics or related discipline will be considered. Strong teaching experience is a plus.

Procedure: Send cover letter and a curriculum vita (with names of references) to physics -at- rowan.edu with a subject line: Adjunct Position in Physics

4. OPENING FOR PHYSICS TEACHERS AT MASTERY CHARTER

Mastery Charter Schools is seeking dynamic and passionate secondary (7-12) physics teachers. Mastery teachers will work together to create a warm, welcoming school culture driven by student achievement. Teachers will be responsible for implementing Mastery's curriculum and utilizing classroom routines and procedures with consistency. Teachers will also be responsible for developing rigorous lesson plans, homework assignments and assessments. Working closely with school leaders, teachers will analyze student assessment data and use data to inform instruction. Teachers will collaborate in grade level teams to discuss student work, share best practices, and ensure student mastery of standards. Teachers will be expected to maintain close relationships with families, including phone calls and conferences, and will participate in

on-going professional development in the spirit of continuous improvement. Mastery is looking for teachers committed to high expectations for students, teamwork, and our motto of "Excellence. No Excuses."

Qualifications: Bachelor's Degree in subject matter or at least two years relevant teaching experience; Must have or be working towards Pennsylvania Teacher Certification; Must be able to work collaboratively in a high-stakes environment; Outstanding instructional skills, including the ability to motivate and challenge students and maintain an orderly classroom environment; Demonstrated expertise in physics instruction; A strong sense of personal accountability for student achievement; A belief that all students should be held to high academic standards; The ability to communicate effectively with parents; Demonstrated professionalism, responsibility, and a strong work ethic; A positive attitude and a drive for personal excellence; The ability to problem-solve; A commitment to Mastery's core values of joy and humor

To apply: Please visit the "Careers" tab of our website: www.masterycharter.org

5. OPENING FOR PHYSICS TEACHER AT URSULINE ACADEMY

Ursuline Academy seeks to hire a physics teacher who is qualified to teach all levels including AP and Environmental Science. If interested, send a cover letter, resume, and three references to uaemployment@ursuline.org.

<http://www.ursuline.org/content/employment-opportunities>

6. RANDOM LINK OF THE WEEK: XKCD'S "WHAT IF" PHYSICS COLUMN

Randall Munroe began his career in physics working with robots at NASA's Langley Research Center. He is famous, however, for engineering a creation of different kind: the iconic web comic that is xkcd, a "comic of math, romance, and language" that romps through physics thought experiments and geek humor with abandon. If you're not familiar with it, at least some of your students probably are.

But Munroe, work-wise, is no longer dedicated exclusively to xkcd. He recently launched "What If?," a collection of infographic essays that answers questions about physics. Published each Tuesday, the feature -- a blog extension of the xkcd site -- aims to analyze the kind of wonderful and fanciful hypotheticals that might arise when the nerdily inclined get together in bars: "What would happen if the Moon went away?" "How much wood would a woodchuck chuck ...?" Some of What If's recently explored questions include: "What if everyone actually had only one soul mate, a random person somewhere in the world?" and "If you went outside and lay down on your back with your mouth open, how long would you have to wait until a bird pooped in it?" and -- the most recent entry -- "If every person on Earth aimed a laser pointer at the Moon at the same time, would it change color?"

<http://what-if.xkcd.com/>

(blurb borrowed, with modifications, from the Atlantic Monthly article, "A Conversation with Randall Munroe")

7. ARMY-FUNDED HIGH SCHOOL & UNDERGRADUATE APPRENTICESHIP PROGRAMS ACCEPTING APPLICATIONS

<http://www.usaeop.com/programs/HSAP/index.htm>

The High School Apprenticeship Program (HSAP) is a commuter program for high

school juniors and seniors who demonstrate an interest in science, technology, engineering, or mathematics (STEM) to work as an apprentice in an Army funded university research laboratory. Students apprentice with experienced scientists and engineers full-time during the summer or part-time during the school year.

Likewise, the Undergraduate Research Apprenticeship Program (URAP) has the SAME description and the SAME application form.

Students should apply online NOW, and specify which HSAP/URAP locations they are interested in. The nearest locations to Philadelphia include Penn State and the University of Delaware, but students may have relatives with whom they could stay for the summer in other locations. All applications are due by 1 April 2013. Don't wait: apply NOW!

GOALS: Provide hands-on research experiences to high school and undergraduate college students; Educate students about the Army's interest and investment in science; Foster mentorship by a university researcher; Inspire students to continue pursuit of STEM interests.

Another Army program at Penn State and other universities nationwide is the JUNIOR SCIENCE AND HUMANITIES SYMPOSIA

<http://www.usaeop.com/programs/JSJS/locations.htm>

It "promotes original research and experimentation in the sciences, engineering, and mathematics at the high school level". Students compete in a regional symposium by orally presenting the results of their original research. Teachers participate with them. It "encourages the success of high school teachers in addressing the attainment and mastery of state and national performance and process skills standards ..."

8. STRING THEORIST BRIAN GREENE SPEAKING AT THE FRANKLIN INSTITUTE OCTOBER 12th

Brian Greene is professor of physics and mathematics at Columbia University. He is recognized for a number of groundbreaking discoveries in his field of superstring theory and for his bestselling books, *The Elegant Universe* and *The Fabric of the Cosmos*. Called the "single best explainer of abstruse ideas in the world today" by *The Washington Post*, Dr. Greene's latest book, *The Hidden Reality*, explores the multiverse. Dr. Greene is co-director of Columbia's Institute for Strings, Cosmology, and Astroparticle Physics and is leading a research program applying superstring theory to cosmological questions. He is also co-founder of the World Science Festival. Professor Don York of Columbia University has organized a free public lecture, featuring Brian Greene, and a panel, moderated by George Ellis, at the Franklin Institute in Philadelphia on Friday, October 12. See the attached flier (*New Frontiers in Astronomy*) for more details.

This event is free to the public, but space is limited. Online reservations are required: www.newfrontiersinastronomy.org/public-lecture. Questions, contact: BigQuestions@oddjob.uchicago.edu

9. HIGH SCHOOL OPPORTUNITY TO DESIGN A LUNAR MISSION PAYLOAD

Want to design an innovative payload for an actual lunar mission as a high school student? Get you and your team together and register for the Moon Mission Challenge

(MMC). The MMC stands out from other high school student team competitions by: Providing students with a concrete set of skills that STEM employers look for, such as systems engineering, project management, conceptual design, brainstorming, and marketing/presentation; Giving students a taste of real world excitement as they work with a Google Lunar X Prize competitor on an actual planned lunar mission; Engaging experts from NASA, industry, and academia to judge student presentations to select Challenge winners; Integrating team member skills across the STEM disciplines as well as those beyond such as marketing, business, writing, and more.

Qualifying teams will make their case for victory at the June 2013 I3 Conference. This single day event will showcase not only MMC teams, but will bring together leading educators, professionals, and students to keep abreast of the latest tools, techniques, and trends in STEAM education (STEM and the Arts). Judges include experts from NASA, Applied Physics Lab, Astrobotic Technology, other X Prize partners, aerospace companies, colleges, entrepreneurs, and others. Cash prizes will be given for the top three placing teams. Particularly interesting ideas may get further developed at the discretion of Astrobotic Technology and Innovate Our World and winning teams are encouraged to apply to the Conrad Foundations Spirit of Innovation Challenge (www.conradawards.org).

Any high school team can enter the MMC because lessons, materials, and resources, including expert chats, are easily accessed via the Internet on www.commoncurriculum.com. Educators will receive free training to organize student teams, deliver content, and guide their team's design process. Many educators will qualify for stipends.

Some key dates include: Team registration begins for the 2012-13 school year: October 1, 2012; Teacher trainings are offered (in person and via WebEx): October-December, 2012; Team submissions: March 15, 2013; Presentations: June 2013

Interested educators and students can get on the mailing list by sending a message to [info -at- innoavteourworld.org](mailto:info-at-innoavteourworld.org)

Ron McCandless, Innovate Our World, inc; 443-326-5431

10. GRANT OPPORTUNITY FOR FULBRIGHT CLASSROOM TEACHER EXCHANGE

Application Deadline: Oct 15, 2012

Program dates: August - December 2013 or August 2013 - June 2014

The Fulbright Classroom Teacher Exchange Program provides opportunities for teachers to participate in direct exchanges of positions with colleagues from other countries for a semester or a year. By living and working abroad, exchange teachers gain an understanding and appreciation of different educational systems and cultures, and enrich their schools and communities by providing students with new perspectives about the world in which they live. The Fulbright Grant provides roundtrip airfare, a maintenance allowance, and assistance with placement in host countries.

Eligibility: Are you a full time K-12 teacher? Are you a U.S. citizen? Have you been teaching for at least 5 years? Are you interested in living in another country? If you answered yes to these questions, you may be eligible to apply.

2013-2014 Participating Countries for K-12 science teachers: Czech Republic, France, Hungary, India, Mexico, United Kingdom.

Please see the Fulbright Teacher Exchange website (listed below) for country-specific requirements

How to apply: visit <http://www.fulbrightteacherexchange.org>

For questions: Email: fulbrightdat@aed.org, Phone: 292.884.8040

Sponsored by the Bureau of Educational and Cultural Affairs (ECA) at the U.S. Department of State.

11. ONLINE GRADUATE COURSE OPPORTUNITY FROM MONTANA STATE UNIVERSITY

A three-credit online graduate course from Montana State University covers the history of space flight and space technology. The instructors are internationally known space journalist Andrew Chaikin and aerospace consultant Jason Marcks. The course, called "History of Spaceflight and Space Technology" (EDCI 591), is offered through MSU's National Teachers Enhancement Network (NTEN) and is designed for science teachers teaching any grade from elementary through community college. Chaikin authored the best-selling chronicle of the Apollo moon missions, "A Man on the Moon," which was the main basis for Tom Hanks' Emmy-winning HBO miniseries, From the Earth to the Moon. The online course is designed primarily for teachers, but is open to anyone with an interest in space exploration from 1958 to the present day. The course begins Sept. 17. It will draw upon Chaikin's large body of historical space research, including his interviews with all 12 men to have walked on the moon, along with hundreds of other pioneering space explorers. Chaikin has also authored numerous articles in magazines including Newsweek, Popular Science, Air & Space/Smithsonian, WIRED, Sky and Telescope, Discover and Science Digest. In addition, Chaikin has written and created online content for space-related Web sites including Space.com, ScientificAmerican.com, and SkyandTelescope.com.

The course is offered through Extended University's National Teachers Enhancement Network (NTEN). For prerequisites and information about the course or to register, visit <http://eu.montana.edu/NTEN> and click on current courses in the lefthand column. The class is listed as EDCI 591-803.

12. 2012 HUMANS IN SPACE YOUTH ART COMPETITION

The international 2012 Humans in Space Youth Art Competition invites students ages 10-18 to express their ideas about the future of human space exploration through visual, literary, musical or digital art.

Artwork submissions will be judged on creativity, skill and demonstration of meaning relevant to expressing "How will humans use science and technology to explore space, and what mysteries will we uncover?"

Winning art will be showcased at displays and multimedia performances worldwide from 2013 to 2014, as well as in an online gallery. Submissions must be received by Oct. 21, 2012.

For additional information and a complete list of guidelines, visit www.humansinspaceart.org. Inquiries about this opportunity should be directed to Jancy McPhee at jancy.c.mcphee@nasa.gov.

13. JOINT SPRING MEETING WITH SOCIETY OF PHYSICS STUDENTS

Save the date for SEPS AAPT's joint spring meeting with the Society of Physics Students Zone 3, on the theme of "Communicating Physics". The meeting will be held at Drexel University in Philadelphia on Friday, April 19 and Saturday, April 20, 2013.

14. OPPORTUNITY TO PUBLISH STUDENT CLIMATE RESEARCH IN HARVARD'S JEI

Harvard University's *Journal of Emerging Investigators*, or *JEI*, has formed a collaboration with the Institute for Earth Science Research and Education to publish a series of peer-reviewed, climate-related research papers authored by middle- and secondary-school students.

JEI is an open-access peer-reviewed online journal whose mission is to encourage and publish authentic student research. In addition to standalone research papers, *JEI* also encourages students who are developing science fair projects to submit journal articles based on those projects. Guidelines for articles, including some practical suggestions for converting a science fair project into a journal article submission, can be found at www.instesre.org.

The initial deadline for an intent to submit a manuscript email is Nov. 30, 2012. For more information, including submission instructions and other deadlines, please contact David Brooks at brooksd@instesre.org.

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>