

News February 28, 2014

Hi again! I hope you're surviving the persistent cold and random snow reasonably well. It was great seeing many of you at the Waves & Light workshop at La Salle last weekend. (For those who attended, Bill Berner has graciously shared the many pictures he took on DropBox here; if anyone else has pictures they'd like us to link or include in our website, we'd be grateful! <https://www.dropbox.com/sh/5g6x43q0o8mjaoe/tgL3o8gSVI?n=13092914>)

There's just one workshop left, on Saturday, April 5th, on the topic of probeware and video analysis. (Registration for these workshops has technically closed; I recommend contacting Greer Richardson at richards -at- lasalle.edu if you have any questions.)

As promised, we now have registration materials available for next month's SEPS AAPT Spring Meeting at Villanova University, Friday March 21 and Saturday March 22, 2014. Our theme this year is "Physics of the Future", and our invited speakers will be Ed Guinan of Villanova on Friday night, (Title: "To Boldly Go? -- Interstellar Destinations: Nearby Potentially Habitable Worlds"), and Michael Brown of Swarthmore on Saturday (Title: "The Prospects for Fusion Energy"). More information is included below and in the attached flyer; updates will be provided by email to the SEPS list and online on the SEPS website (<http://physics.upenn.edu/aapt>) as further details are finalized.

The registration form is online here: <http://goo.gl/undRIQ>.

Registration checks for the SEPS Spring Meeting should be made out to SEPS AAPT and send to our treasurer, Art Zadrozny, 16 Painters Lane, Chesterbrook, PA 19087, by March 10th, the early registration deadline. Late and onsite registration will be slightly more expensive; the full list of rates is below.

OUTSIDE of Southeastern PA, our neighbors in nearby sections also have upcoming spring meetings, and they would be glad to have you in attendance if it is convenient to you. The New Jersey section of the AAPT will be meeting March 14th-15th in Princeton, NJ; their preregistration deadline is March 9th. Onsite/late registration is available for Saturday's events but not for Friday's. The Cheseapeake section of the AAPT will be meeting April 5th in College Park, MD; conference registration is only \$20, and hotel rooms are available for \$109 if you register before March 14th. Further details about both meetings are below, and the CSAAPT flyer is attached.

There's a ton more stuff in this newsletter! Here's the list of the remaining contents:

1. Save the date for SEPS College Labs Workshop at Villanova (3/22)
2. Register now for SEPS AAPT's spring meeting at Villanova (3/21-3/22, registration deadline 3/10)

3. Undergrad Physics Teaching Workshop preceding APS April Meeting (4/4, early bird registration by 2/14)
 4. AP Institute Scholarships available for teachers in minority/low-income/rural schools (deadline extended to 3/1)
 5. Two summer astrophysics workshops for teachers at Penn State (deadline 3/16, workshop dates 7/21-25, 7/28-8/1)
 6. NSTA members can win a trip to Japan through TOMODACHI Toshiba Science Leadership Academy (deadline 4/15)
 7. AAPT Physics Bowl Registration is still open (and closes 3/3)
- Job opening for physics teacher at St Andrew's School in Delaware
8. Registration now open for summer physics and chemistry Modeling Workshops around the country
 9. Physics Workshops at LaSalle University (registration is closed, last workshop is 4/5)
 10. Register now for NJAAPT's Spring Section Meeting at Princeton (pre-registration deadline 3/9, section meeting 3/14-3/15)
 11. Register now for CSAAPT's Spring Section Meeting in College Park (room block open until 3/14, abstracts due 3/26, meeting 4/5)
 12. 120 copies of Paul Zitzewitz's Physics Principles & Problems available for free
 13. Opening for Lecturer at Penn State Harrisburg
 14. Princeton Plasma Camp (application deadline 3/28, camp runs 7/14-7/18)
 15. Penn LRSM offers science workshop in Archaeology (3/11)
 16. Penn Outreach Lectures at LRSM (next lecture 3/20)
 17. LRSM Science Cafes at World Cafe Live and Stoney's British Pub (next science cafes 3/3 and 4/21 in Wilmington, 3/5 and 4/2 in Philadelphia)
 18. American Helicopter Museum & Education Center seeks educators for Advisory Board
 19. Free Science Saturday Open Lectures at Princeton's Plasma Physics Lab (next lectures 3/1, 3/8)
 20. Free field trips and professional development workshops at the NASTAR

Center (summer one-day workshops 7/7-8/1)

21. NASA Exploration Design Challenge (deadline 3/14/14)

22. Cool physics links: Interactive solar system map, Dave Maiulo on the weather channel, Ski jumping explained, Dan Burns' Science on Simpsons, Zaption interactive video maker

23. 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.

Feel free to email me, Paula Miller ([pjmiller4 -at- comcast.net](mailto:pjmiller4-at-comcast.net)) or Jeremy Carlo ([jeremy.carlo -at- villanova.edu](mailto:jeremy.carlo-at-villanova.edu)) if you have any questions about our upcoming spring meeting. I look forward to seeing many of you at Villanova next month!

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
Archmere Academy
Claymont, DE 19703

1. SEPS AAPT OFFERS COLLEGE LABS WORKSHOP AT VILLANOVA

Saturday, March 22, as part of the SEPS AAPT Spring Meeting at Villanova, SEPS will be leading a two-hour afternoon workshop focusing on teaching college physics labs, specifically those for the introductory courses. The goal will be to present how these intro course physics labs have changed over the years, and to discuss the philosophy and goals of labs today, at area colleges and universities. Representatives from Bryn Mawr, Swarthmore, St. Joseph's, West Chester, Villanova, Penn, and Princeton will serve on a panel, discussing the evolution of lab instruction at their respective schools, and sharing examples of labs that have worked particularly well. Barry Feierman is working to put this together; if you have questions or are interested in participating, please contact him ([bhfeier -at- aol.com](mailto:bhfeier-at-aol.com)).

2. REGISTER NOW FOR SEPS AAPT'S SPRING MEETING, MARCH 21-22

AAPT SEPS 2014 Spring Meeting
March 21-22, 2014
Villanova University, Villanova, PA
Theme: "Physics of the Future"

Jeremy Carlo is coordinating this year's exciting spring meeting at Villanova. All conference events will take place in Mendel Hall (shown in red on the attached campus map). Friday events include buffet dinner, lecture, observatory viewing / tour of Villanova Astronomy facilities. Saturday events include breakfast, invited talk, contributed talks/demos, business meeting, lunch, poster session, and afternoon workshops. The full schedule will be posted online on the SEPS website (<http://physics.upenn.edu/aapt>) as it is finalized, but Friday night's events will begin with registration at 5, dinner at 6, and Ed Guinan's talk beginning around 7:30.

Friday Evening Invited Lecturer: Edward Guinan, Professor of Astronomy, Villanova University
Title: "To Boldly Go? — Interstellar Destinations: Nearby Potentially Habitable Worlds"

Saturday Morning Invited Lecturer: Michael Brown, Professor of Physics, Swarthmore College

Title: "The Prospects for Fusion Energy"

Saturday afternoon workshops:

"Math and Sustainability," Victor Donnay, Professor of Mathematics, Bryn Mawr College.

"College Intro Physics Lab Design: Strategy and Philosophy," Barry Feierman, Westtown School and West Chester University

"Math and Sustainability" workshop description:

In this hands on workshop, we will look at connections between topics in sustainability (energy use in solar panels, arctic ice extent, CO₂ levels) and key mathematical concepts (mathematical modeling, area under curve, linear approximation, trig functions). These examples can be used at a variety of levels. Participants should bring laptops with a spreadsheet program. The presenter, Victor Donnay, Professor of Mathematics at Bryn Mawr College, was Chair of the national Advisory Committee for Mathematics Awareness Month 2013 - the Mathematics of Sustainability and will describe some of the resources available at the website: www.mathaware.org/mam/2013.

"College Intro Physics Lab Design" description:

Panel discussion on the design and the place of introductory college/university physics labs, facilitated by Barry Feierman.

Panelists include:

Bryn Mawr College - Mark Matlin and Peter Beckmann

Saint Joseph's University - Paul Angiolillo and Kathleen Hennessy
Swarthmore College - Mary Ann Klassen
West Chester University - Bill Sawyer
Villanova University - Jeremy Carlo
Princeton University - Katerina Visnjic
University of Pennsylvania – Kenneth Lande

The registration form is online here: <http://goo.gl/undRIQ>

Please send checks payable to SEPS-AAPT to
Art Zadrozny
16 Painters Lane
Chesterbrook, PA 19087
(Note this is a new address from last year!)

Early registration (registration & payment received by March 10)

Full conference: \$70 (\$80 for non-members)
Friday only: \$25 (\$30 for non-members)
Saturday only: \$50 (\$55 for non-members)

Late registration (registration & payment received after March 10)

Full conference: \$80 (\$90 for non-members)
Friday only: \$30 (\$35 for non-members)
Saturday only: \$55 (\$60 for non-members)

Student rates (for eligible undergraduate/graduate students):

Full conference: \$35
Friday only: \$15
Saturday only: \$20

The additional cost for non-members of SEPS can be counted towards our annual \$10 membership dues.

Contributed Talks / Demos

If you would like to submit an abstract of your contributed talk or demo, send it to:

Jeremy P. Carlo
Department of Physics
Villanova University
800 Lancaster Avenue
Villanova, PA 19085

jeremy.carlo-at-villanova.edu

Please specify whether you prefer an oral or poster presentation, as well as any A/V or equipment requirements. You may contact Jeremy directly if you have special needs.

3. UNDERGRAD PHYSICS TEACHING WORKSHOP PRECEDING APS APRIL MEETING

Are you or your colleagues planning to attend the APS April Meeting? Please

spread the word about this workshop:

Faculty teaching undergraduates in Spring 2014 are cordially invited to a pragmatic workshop and discussion on physics teaching challenges and strategies. Please join us to learn and share practical tips that anyone can apply to improve student learning and engagement. To address challenges in our research, we know the benefits of building on prior work and of discussion and collaboration with our colleagues. Let's use the afternoon before APS to reap such benefits to address teaching challenges.

Registration fees: \$50 Regular Registration (Early Bird deadline has passed)
Light refreshments will be provided.

Facilitators: Aatish Bhatia, Carolyn Sealfon, and Katerina Visnjic, Princeton University

More information here: <http://www.aps.org/meetings/april/events/teaching.cfm>

4. AP INSTITUTE SCHOLARSHIPS AVAILABLE FOR TEACHERS IN MINORITY/LOW-INCOME/RURAL SCHOOLS

The AP Fellows scholarships are awarded to AP teachers at schools in the U.S. with 50 percent or more of the student population consisting of underrepresented minority or low-income students. Each recipient will receive \$1,000 to attend a College Board-endorsed AP Summer Institute.

New this year are AP Rural Fellows scholarships, which will be awarded to AP teachers from schools serving rural areas of the United States. Each recipient will receive \$1,500 to attend a College Board-endorsed AP Summer Institute. Visit the AP Grants Page for more information:

http://professionals.collegeboard.com/k-12/awards/ap-grants?ep_ch=PR&ep_mid=10869886&ep_rid=30887332

The application deadline has been extended to March 1, 2014.

5. TWO SUMMER ASTROPHYSICS WORKSHOPS AT PENN STATE

Greetings all Science Educators!

Keep pace with the latest science research, engage in standards-based classroom activities and explore ways to make science fun while working with Penn State faculty during these summer workshops for inservice science, technology, engineering and mathematics, or STEM, educators. Network with peers and earn graduate credits. Workshops are aligned with the national science education standards and Pennsylvania standards for science and technology.

All workshops take place on Penn State University Park campus facilities in Pennsylvania. Grants are awarded to all participants to cover lodging, parking,

and partial tuition.

Applications for all workshops are due March 16, 2014.

The Origins and Fate of Our Cosmos: Understanding Big-Bang Cosmology
(Grades 6-12) -- July 21-25, 2014

This workshop will introduce cosmology, the study of the Universe as a whole. We will cover what modern observational and theoretical work has taught us about the origin, fate, and nature of the Universe. The pillars and successes of the Big Bang model will be examined in detail. Modern ideas about space, time, and gravity will also be explored.

<http://teachscience.psu.edu/workshops/cosmology.html>

Hands-On Particle Astrophysics (Grades 9-12) -- July 28-August 1, 2014

This workshop will feature hands-on explorations of high-energy messengers from extreme cosmic phenomena, such as Galactic supernova blast waves. Strategies for classroom implementation will be highlighted.

http://teachscience.psu.edu/workshops/particle_astrophysics.html

Questions about the Pennsylvania Space Grant workshops should be directed to Alli Fox at [spacegrant -at- psu.edu](mailto:spacegrant-at-psu.edu).

6. NSTA MEMBERS CAN WIN A TRIP TO JAPAN THROUGH TOMODACHI TOSHIBA SCI/TECH LEADERSHIP ACADEMY

NSTA members who teach grades 9–12 in the United States are eligible to enter the TOMODACHI Toshiba Science & Technology Leadership Academy (http://www.toshiba.com/csr/education_tomodachi_stem.jsp \t "_blank) for a chance to win a trip to Japan. The academy is an annual one-week, cross-cultural STEM exchange and leadership program for 16 high school students and eight teachers from Japan and the United States.

Interested teachers apply individually and develop a hands-on activity with a written lesson plan, including a brief video that shows them teaching the activity to their students. The activity must enhance understanding of scientific/ engineering practices, the disciplinary core ideas, and the crosscutting concepts espoused in the Next Generation Science Standards.

The deadline for applications is April 15, 2014. For more information, please visit the TOMODACHI Toshiba website or e-mail [tomodachi -at- nsta.org](mailto:tomodachi-at-nsta.org).

7. AAPT PHYSICS BOWL REGISTRATION DEADLINE IS MARCH 3, 2014

Physics Teachers, enter your students in PHYSICSBOWL 2014 and receive

national recognition for your school, your students, and your teaching excellence!

The registration process for the PhysicsBowl Contest is quick and easy.

Register online with a credit card, or if utilizing a purchase order, you may download a PDF form, then complete and send to the AAPT National Office. The registration deadline is March 3, 2014.

<http://www.aapt.org/Programs/PhysicsBowl/regonline.cfm>

Specific student names are not needed at this time, only the total number of students who plan to take the exam. Information regarding fees, exam formats and testing dates are available on the registration page at <http://www.aapt.org/Programs/PhysicsBowl/>

(PLEASE NOTE: Only a faculty member from the school or host site may register. Student initiated registrations are ineligible.)

8. JOB OPENING FOR PHYSICS TEACHER AT ST. ANDREW'S SCHOOL IN DELAWARE

St. Andrew's school, a co-ed boarding school of 300 in Delaware, is looking for a full-time physics teacher for the 2014-15 school year. We are a 100% boarding school with a deep commitment to financial aid (nearly half the student body is on aid and the average grant is \$38,000). We offer introductory and honors physics, both of which follow a modified modeling curriculum, as well as a 2nd year physics course taught from the Matter and Interactions text. A typical class load is 3 or 4 sections of 12-15 students.

You can find more information about this position and the school at John Burk's blog:

<http://quantumprogress.wordpress.com/2013/11/26/looking-for-a-physics-teacher/>

and Mark Hammond's blog:

<http://physicsparsimony.wordpress.com/2013/12/03/job-opening-at-st-andrews-whats-it-like-to-work-here/>

You can find the job posting here: <http://www.standrews-de.org/aboutus/employment-opportunities/available-positions/index.aspx>. Note that St. Andrew's is also looking for a Computer Science instructor.

9. REGISTRATION NOW OPEN FOR MODELING WORKSHOPS AROUND THE COUNTRY

The American Modeling Teachers Association (AMTA) is sponsoring a number of workshops this summer for Biology, Chemistry and Physics teachers interesting in learning more about Modeling Instruction. Modeling is an instructional

approach that has been in development since 1990 (under the leadership of [David Hestenes](#), Emeritus Professor of Physics, Arizona State University), and is designed to correct many weaknesses of the traditional lecture-demonstration method, including fragmentation of knowledge, student passivity, and persistence of naive beliefs about the physical world. Modeling Instruction organizes the course around a small number of scientific models, and focuses on applying structured inquiry techniques to the teaching of basic skills and practices in mathematical modeling, proportional reasoning, quantitative estimation and technology-enabled data collection and analysis.

A full listing of Summer 2014 workshops can be found at: <http://modelinginstruction.org/teachers/workshops-2014/>

The AMTA website also contains other information pertaining to modeling instruction.

The Physics Teachers group in NYC (only 2 hours away, if traffic is your friend) is running a couple of particularly cool-sounding workshops at Columbia Teachers College, which are filling up quickly:

1. High School Chemistry (introductory level), led by Donghong Sun and Tammy Gwara.
2. Physics – Mechanics (introductory level), led by Paul Bianchi and Seth Guinals-Kupperman.
3. Physics - Models of Light (advanced level, requires one previous introductory level Modeling Instruction Workshop), led by Mark Schober and Kofi Donnelly.

All three workshops run simultaneously, July 21 – Aug. 8, 2014 (3 weeks, Monday through Friday) at Columbia Teachers College, 525 West 120th St., NY, NY.

Sign up for the workshop of your choice at: stemnycsummer14.eventbrite.com.

\$50 registration fee; \$449 balance will be due later in spring.

Who Should Attend: Middle, high school, and university teachers, and prospective teachers, of physics, chemistry or physical science. Teachers of biology, other sciences, math, technology and engineering also may find these workshops useful. At least one year-long, algebra and trigonometry-based, college-level course in the subject matter of the workshop is strongly recommended. The chemistry and mechanics workshops are for teachers who have not previously taken a 3-week workshop on Modeling Instruction. Teachers who register for the Models of Light workshop are expected to have previously completed at least one 3-week workshop on Modeling Instruction at the

introductory level.

Cost: \$499 (for one 3-week workshop), including 1-year membership in the American Modeling Teachers Association. \$50 deposit is required to reserve space; balance will be due later in spring. Each workshop is limited to 24 participants. Certificates are available. Graduate credit at SUNY Empire State College will very likely be available.

Detailed Description: In all workshops, the instructors teach by example, guiding participants through a series of well-defined scientific models using a detailed course manual including classroom-tested, teacher-developed labs, activities, discussions, worksheets, and assessments. An explicit modeling learning cycle is used. References describing Modeling Instruction and documenting its effectiveness are available at <<http://modeling.asu.edu/R&E/Research.html>> and at <<http://tinyurl.com/modelingarticle>>.

All three workshops will follow outlines and use the course manuals developed by the American Modeling Teachers Association and its predecessor, the Modeling Instruction Program, over the past 20 years.

1. High School Chemistry. This workshop is intended for teachers who have not previously taken a workshop in Modeling Instruction. The workshop immerses teachers in Modeling Instruction so that participants develop the skills necessary to implement this student-centered, research-informed, standards-based curricular approach with their students. The instructors guide participants through the core units of a high school chemistry course as they would with high school students. In teacher mode, the pedagogical rationale for all aspects of the example instruction is explored as well as accommodating various student populations, class schedules, testing requirements, and laboratory resources. Through readings and discussion, the workshop also delves into cognitive research, pedagogical content knowledge, and the theoretical underpinnings of Models and Modeling that are essential to understanding Modeling Instruction as both a teaching practice and philosophy.

Specific topics of study include: particulate structure of matter, energy and kinetic molecular theory, stoichiometry, and energy and chemical change.

2. Physics (Mechanics). This workshop is intended for teachers who have not previously taken a workshop in Modeling Instruction. Eight explicit models, as detailed in the mechanics modeling course manual, are studied in “student mode”: constant velocity model, uniform acceleration model, free particle (balanced force) model, unbalanced (net) force model, projectile motion model, circular motion model, conservation of momentum model, conservation of energy model. In “teacher mode,” the pedagogical rationales for all aspects of the example instruction are explored, as well as accommodating various student populations, class schedules, testing requirements, and laboratory resources. Through readings and discussion, the workshop delves into cognitive research, pedagogical content knowledge, and the theoretical underpinnings of Models and

Modeling so as to develop an understanding of Modeling Instruction as both a teaching practice and philosophy.

3. Models of Light. This workshop is intended for teachers who have previously taken a workshop in Modeling Instruction (usually the mechanics or chemistry workshops). As a result, there is less emphasis here on the details, advantages, and practice of modeling instruction, since we assume that teachers are already familiar with the approach and have used it to some extent in their classrooms. Additional details about the content and approach of this workshop will be posted soon.

9. FREE PHYSICS WORKSHOPS AT LASALLE UNIVERSITY IN SPRING 2014

I (Jillian) had the pleasure of attending LaSalle's first two workshops last month. The first one was presented by Bill Berner (Penn) and Barry Feierman (retired, Westtown, WCUPA), on the topic of Electricity and Magnetism, and the second one was presented by Bob Schwartz (Harrington, Kohelet Yeshiva) and Jay Bagley (Gloucester County College) on the topic of Waves, Sound, and Light. Our gracious hosts at La Salle were Greer Richardson and Ling Liang. The workshop leaders presented us with a wide variety of thought-provoking demonstrations, including simple experiments we could construct with everyday objects, computer simulations, useful cell phone and tablet apps, and some higher-tech equipment from the Penn Demo lab. We had a great turnout -- thank you, everyone who came! -- which led to a lot of stimulating conversation among participants as we explored the demonstrations and ideas.

A more thorough and less biased (or at least, differently biased) summary of the first workshop is available on the SEPS website:

<http://www.physics.upenn.edu/aapt/2014ws1/2014WS1.html>, and Bill Berner's excellent photographs of both workshops are available online here: <https://www.dropbox.com/sh/5g6x43q0o8mjaoe/tgL3o8gSVI?n=13092914>

If you attended the workshop and want digital copies of the handouts, please contact Bill (berner -at- physics.upenn.edu) or Barry (bhfeier -at- aol.com).

There is one remaining free Physics Workshops at LaSalle, co-sponsored by SEPS AAPT, LaSalle's Graduate Programs in Education, the Philadelphia Education Fund, and the Philadelphia Regional Noyce Partnership. Registration has closed, but for those who are registered, here's a quick summary of the information, with more details in the attached flyer.

All sessions:

Saturdays from 9 am – noon

La Salle University

Holroyd Hall 053

1900 West Olney Ave., Philadelphia, PA 19141

Workshop #3: Use of Data Collection Technological Tools, Probeware, and Video Analysis in Teaching Physics

Saturday, April 5, 2014

Presenters: Bob Schwartz, Jay Bagley, Bill Berner, and Barry Feerman

<https://www.eventbrite.com/e/free-physics-workshop-series-at-la-salle-use-of-data-collection-technological-tools-probeware-and-tickets-9815314871>

(Though not a requirement, if attendees have an Apple iPad, they should download Video Physics (Vernier) and Graphical Analysis (Vernier) from the AppStore. Each costs \$1.99. If attendees do not have an iPad, another device capable of filming video, such as a smartphone or tablet, is highly recommended.)

For more information, see the attached flyer or contact
Greer Richardson, Ph. D
Director of Graduate Programs in Education
La Salle University
215-951-1806
[richards -at- lasalle.edu](mailto:richards-at-lasalle.edu)

10. REGISTER NOW FOR NJAAPT'S SPRING SECTION MEETING, MARCH 14-15

The annual NJAAPT Spring Section Meeting will be held at Princeton University Friday and Saturday, March 14 & 15. Please check their website (<http://www.njaapt.org/>) for updates about the meeting. Registration information, including pricing and the registration form, is currently posted on their Spring meeting page: http://nj.aaptsections.org/?page_id=525

(Found by clicking "Calendar of Events" and then "Spring Meeting" from the main page.)

You may register for one or both days and there is a savings for the two-day attendance. Friday will include a wine and cheese reception, buffet dinner, and a talk entitled: "A Ray of Light in a Sea of Dark Matter" by Charles Keeton of Rutgers University. The pre-registration deadline is March 9th. Walk-up registration will be available on Saturday but not on Friday.

Saturday's fee will include registration, breakfast, and lunch. Wil van der Veen, the Program Director of the NJ Astronomy Center for Education, will address the Next Generation Science Standards discussing all the sciences. Revisions in the AP Physics B course will be discussed by Patty Zober, a Pennsylvania high school physics teacher and leader of workshops related to the changes. There will also be breakout sessions to discuss these topics and another to answer as

many questions as possible on the subjects. The meeting will conclude with a demonstration show conducted by the Princeton University staff.

From Ray Polomsky, NJAAPT Section President:

The Spring Section Meeting is scheduled for Friday and Saturday, March 14 & 15 at Princeton University. We hope that you will participate in the meeting either on Friday or Saturday or both days to be brought up to date with changes that are occurring in the Next Generation Science Standards and the AP B Physics course. The NGSS will have an effect on physics, but it also does so to chemistry, physical science, biology, and earth science. Therefore, we suggest that you share this information with your colleagues and invite them to attend the meeting with you. You will be sent a registration form in another email that you can distribute to other science teachers you know.

A change in the program for Saturday relates to the Demonstration Show which is the final event of the meeting. This year we are planning to replace the presentation by the Princeton staff with a Demonstration Share-a-Thon. We are opening the session to all those attending who wish to share a favorite demonstration or two. This is a great opportunity to be a very active participant at the meeting. If you are interested in presenting, please contact me by email at: [r7429 -at- optonline.net](mailto:r7429-at-optonline.net) to be added to the list of individuals sharing with the group.

Ray Polomski

President

11. REGISTER NOW FOR CSAAPT's SPRING SECTION MEETING, APRIL 5

David Polomski, CSAAPT Section President, would like to invite you to the Spring Meeting of the Chesapeake Section of the American Association of Physics Teachers. It will be held on April 5, 2014 at the American Center for Physics in College Park, Maryland. Details are contained in the attached flyer; the luncheon speaker will be Kimberly Moore of the University of Maryland, speaking about "Micro-Motion Labs for Life Science Physics." Rooms can be reserved in CSAAPT's block until March 14th; abstracts are due March 26th.

12. 120 COPIES OF PAUL ZITZEWITZ'S PHYSICS PRINCIPLES & PROBLEMS AVAILABLE FOR FREE

Marple Newtown HS is looking to give away the following physics textbooks: 120 copies of Physics Principles and Problems © 2009 edition (texts are generally in very good shape) by Zitzewitz, et. al. (Glencoe). We also have the associated teacher materials. The online text subscription is not included. Any school wanting the books must make arrangements to pick them up in person- we cannot ship, box or package the books. Contact Dennis Andrews, Science

Department Leader at [dandrews -at- mnsd.org](mailto:dandrews-at-mnsd.org) .

13. OPENING FOR LECTURER AT PENN STATE HARRISBURG

Penn State Harrisburg, School of Science, Engineering and Technology invites applications for the full-time, non-tenure track position, Lecturer/Senior Lecturer in Physics, effective Fall semester 2014. The successful candidate is expected to teach a broad range of undergraduate courses/labs in Physics, Astronomy, and/or Earth Science. In addition, all full-time faculty are expected to engage in scholarly activities, participate in University/College and professional service, assist with ABET accreditation processes, and advise undergraduate students. The minimum qualification is a Ph.D. in Physics or a closely related discipline plus relevant experience. Preference will be given to individuals who have demonstrated commitment to excellence in college teaching. Information about the College can be found at www.hbg.psu.edu.

This is a fixed-term appointment with excellent opportunity for re-funding. Applicants should submit a cover letter, curriculum vitae, three letters of reference, and a personal statement of teaching philosophy to Lecturer/Senior Lecturer in Physics Search Committee, c/o Mrs. Dorothy J. Guy, Director of Human Resources, Penn State Harrisburg, Box: AAPT-41003, 777 W. Harrisburg Pike, Middletown, PA 17057-4898 or via e-mail at [HBG-HR -at- LISTS.PSU.EDU](mailto:HBG-HR-at-LISTS.PSU.EDU). Review of applications will begin on November 25, 2013, and will continue until the position is filled. Employment will require successful completion of background check(s) in accordance with University policies. Penn State is committed to affirmative action, equal opportunity, and diversity of its workforce.

A flyer suitable for posting in your department is attached.

14. PRINCETON PLASMA CAMP

The Plasma Science and Fusion Energy Institute (Plasma Camp) is a one-week intensive workshop designed to provide the opportunity to study plasma physics and fusion energy through experimental research in our state-of-the-art laboratories. Participants will perform experiments, in collaboration with laboratory scientists, that investigate the basic properties of plasmas. Finally, plasmas are ideal to illustrate many concepts in high school physics curricula including waves, atoms, nuclear reactions, relativity, electricity and magnetism. An integral part of the Institute will be the development of new plasma-based lesson plans, student-led investigations and demonstrations.

All participants will receive equipment similar to what is used during the workshop to take back to their classroom. In addition, up to \$2,000 is available through a mini-grant to purchase additional equipment after completion of the workshop. The 201 Plasma Camp program will run from July 14-18. The deadline to apply is 5 PM on Friday, March 28.

To find out more about Plasma Camp, check out the following website or contact Deedee Ortiz at [dortiz -at- pppl.gov](mailto:dortiz@pppl.gov).

<http://www.pppl.gov/education/science-education/programs/plasma-camp>

15. PENN LRSM OFFERS SCIENCE WORKSHOP IN ARCHAEOLOGY

Andrew McGhie of Penn's Lab on the Research of Structure of Matter writes:

We still have several slots left in our 11th Science in Archaeology Workshop on Tuesday, March 11, 2014 at the LRSM, 3231 Walnut St. Philadelphia. This includes breakfast, and lunch at the University Museum plus a trip to a working lost wax bronze casting foundry. In addition to science teachers, this workshop could be of interest to historians and art teachers. Please spread the word to other teachers, trainee teachers, and teachers seeking employment. We would like as many people as possible to benefit from this workshop.

To register go to the simple, on-line application form at www.lrsm.upenn.edu/outreach

(A flyer is attached.)

16. 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

A flyer for the complete lecture series is attached. Upcoming lectures include:

March 20th, I-Wei Chen, Materials Science & Engineering, "Using nanoparticles for drug delivery"

April 24th, Alison Sweeney, Physics & Astronomy, "Solar energy conversion by giant clams"

May 15th, Jeffrey Saven, Chemistry, "The molecules of life: Molecular design"

Remember that pizza and refreshment will follow and that parking is available on-street via Pay and Display kiosks. More information about the LRSM's outreach lectures 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](mailto:mcghie-at-lrsm.upenn.edu).

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

17. LRSM SCIENCE CAFES AT WORLD CAFE LIVE AND STONEY'S BRITISH PUB

LRSM also offers a series of science cafes, open to the public. The next Science Cafe at the World Cafe Live, 3025 Walnut St., will be on Wednesday, Feb. 12, 2014, at 6:00 pm. The speaker is Prof. William Wunner, Wistar Institute, and his topic is 'Rabies: A perpetual killer disease...' , see flyer attached. On-street parking is available on Walnut St. using Pay and Display kiosks. Come early for dinner and a good seat during Happy Hour, 5-7 pm. No purchase is necessary to attend this talk.

Upcoming Science Cafes include:

March 3, 2014 at Stoney's British Pub in Wilmington: "Will it float? The science of keeping one's head above water", Bill "Bunsen" Berner, Penn

March 5, 2014 at World Cafe Live in Philadelphia: "Rock Mechanics of Fracking", Tim Bechdel, Enviroscan, Inc and Penn

April 2, 2014 at World Cafe Live in Philadelphia: "Eating in a Material World", Schuyler Patton, Central High School, and Russ Composto, MSE at Penn

April 21, 2014 at Stoney's British Pub in Wilmington: "Advances in the Paleoarchaeology of bones", Gilbert Sloan and Janet Monge, Penn

May 7, 2014 at World Cafe Live in Philadelphia, "The Molecules of Life", Jeff Saven, Chemistry at Penn

Full schedule here: <http://www.lrsm.upenn.edu/events/sciencecafes/>

18. AMERICAN HELICOPTER MUSEUM & EDUCATION CENTER SEEKS EDUCATORS FOR ADVISORY BOARD

The American Helicopter Museum and Education Center, located in West Chester, PA, is looking for educators who might be interested in joining our Education Advisory Board. The Education Committee meets once a month, either on-site at the Museum, or via phone-in conference. They are looking to expand their education offerings and would like advice from educators, either current or retired, on what is needed in the classroom, as well as professional development. The Museum has an extensive collection of rotary-wing artifacts, helicopters, autogiros and convertiplanes on display, as well as a library and archives. Education Advisory Board members brainstorm the best way to use the Museum's resources in public education programs.

In addition, the museum is are always looking for volunteers who may have an

interest in the mission of the museum. Please refer to the attached flier describing a number of volunteer opportunities.

Inquiries should be directed to Patti Spackman at [pspackman -at- americanhelicopter.museum](mailto:pspackman-at-americanhelicopter.museum).

19. 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. Doors open at 8:15. Free breakfast is provided before the lectures. The hour-long lectures are followed by a Q&A session which typically ends by 11:15 AM.

The next few lectures will be:

March 1: Can Studying Infinite Dimensional Space Help Us Improve Healthcare?

March 8: From MOOC to MIIC: Can Effective Learning Be Big?

More information here, and in the attached SOS flyer: <http://www.pppl.gov/events/upcoming>

20. 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, but some of the teacher workshops are more interactive!) For more information, or to schedule a Teacher Orientation and check out the facilities before planning a class trip, check out their website at: <http://www.nastarcenter.com/education>

Available teacher workshops (<http://www.nastarcenter.com/education/teachers>) include:

- 500 Years of Flight (July 8, July 22): This program is designed to enhance teacher understanding of the history of aviation and the impact of technology on society using hands-on activities and projects.
 - Acceleration (July 11, July 25): Designed to enhance teacher understanding of Newton's Laws of Motion through personal centrifuge flight experience and hands-on activities.
 - The Atmosphere and Weather (July 14, July 29): Teachers construct simple weather instruments and practice hands-on activities that help communicate meteorological phenomenon and climate effects to students.
 - K'NEX Energy, Motion, and Aeronautics (July 16, July 30): Teachers will use K'NEX to learn about Newton's Laws of Motion, forces of flight, ballistics, aircraft stability and control, and spatial disorientation.
 - Exploring the Solar System (July 15, July 29): This program introduces educators to the environmental conditions on the planets and presents material on all objects in our solar system.
 - The Magic of Flight (July 9, July 23): This program is designed to enhance teacher understanding of how and why airplanes fly. It features hands-on activities, a session in a NASTAR Center Aircraft Simulator, and classroom materials.
 - Physiology of Flight (July 7, July 21): This program uses NASA Summer of Innovation curricula and lesson plans to enhance teacher understanding of the effects of space flight on the human body.
 - Rocket Science (July 10, July 24): Designed to enhance teacher understanding of Newton's Third Law of Motion, rocketry and space exploration through hands-on activities and take away materials for in-classroom use.
 - Rocket Science, Stage II (July 17, July 31): This program is designed for participants who already have an understanding and mastery of the basics of model rocketry.
 - Space Suits (July 18, August 1): Participants will participate in a variety of hands-on activities that demonstrate elements of space suit design and operation.

21. 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 .

22. eCYBERMISSION SEEKS FACULTY JUDGES

eCYBERMISSION is a web-based Science, Technology, Engineering, and Math (STEM) competition for students in grades 6-9 that promotes self-discovery and enables all students to recognize the real-life applications of science, math, and technology. Using either the scientific method or the engineering design process, teams of 3-4 students propose a solution to a real problem in their communities to compete for State, Regional, and National Awards and recognition. Sponsored by the US Army and supported by a diverse group of volunteers, eCYBERMISSION promotes the importance of STEM education to students across the country.

eCYBERMISSION is seeking adult volunteers in three capacities, which include:

Ambassadors: Serve as the "Face of eCYBERMISSION" by promoting the competition and recruiting both students and volunteers in your community and

workplace.

Cyberguides: Provide online assistance to eCYBERMISSION students through the use of Discussion Forums, Chat Rooms, Instant Messaging, and interactive webinars.

Virtual Judges: Evaluate and score team Mission Folders via the eCYBERMISSION website.

They are especially trying to recruit qualified faculty judges to evaluate virtual portfolios in February - April. For more information or to register, check out <https://www.ecybermission.com/>

23. COOL LINKS:

SpectraSnapp, a free app from APS physics that turns an iPhone into a hand-help spectroscope:

<http://go.aps.org/spectrasnapp>

CollegePhysics, a free Creative-Commons-licensed online physics textbook created through a collaboration between AAPT and Rice University:

<http://openstaxcollege.org//AAPTPhys>

Interactive map of the solar system, with cutaways of planetary structure:

<http://www.solarsystemscope.com/>

Weather channel showcases Rutgers physics demos by Dave Maiulo:

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

Ski jumper talks about technique, ski angle, weightlessness

<http://www.nytimes.com/newsgraphics/2014/sochi-olympics/ski-jumping.html>

I recently learned from Dan Burns on the AP Physics Listserve about a website called Zaption that allows you to combine add interactive elements, such as clicker-type questions, to Youtube and Vimeo videos. There a number of possible question types, including having them draw on a figure, respond numerically, or select options from a list. The instructor can view the responses or download them as a spreadsheet file. You can also edit videos by combining them, changing the start/end times, or adding images or text windows next to a video to annotate it. If you like using screencasts or video lectures, this looks like a really cool way to make them more interactive and ensure that students actually watch and pay attention to them. It's not actually free -- it's \$49/year for the instructor, but free for students to view; there are also higher subscription levels and site licenses available, and a free 30-day trial so you can play with it. Here's the video

Dan created to demonstrate some of the features -- he took a Veritasium video on temperature and a clip from "A Christmas Story" and added some educational, interactive elements: <http://zapt.io/t3tfsxpg>

The main website is here: <http://www.zaption.com/>

Dan Burns also maintains an extensive online collection of science clips from The Simpsons:

<http://www.lghs.net/ourpages/users/dburns/ScienceOnSimpsons/Clips.htm>

24. 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>