

Hi everyone!

Summer seems to have started late this year, but hopefully it's under way or at least on the horizon for all of you now, depending your schedule.

In last month's newsletter, I forgot to mention two of our new/old SEPS officers. The full officer list is:

President: Paula Miller (Lincoln HS)

Vice President: Sardari Khanna (York College of Pennsylvania)

Treasurer: Art Zadrozny (West Chester East HS)

Section Rep: Jay Bagley (Mastbaum HS)

Members at Large: Bill Heffner (Lehigh), Craig Halpern (Ewing HS), Bill Berner (Penn), Ling Liang (LaSalle U)

Webmaster: Martha Takats (Ursinus)

Secretary: Jillian Waldman (Archmere)

As usual, we also have several local job openings -- the most recent ones are on the college level, at Penn State Harrisburg and Chestnut Hill College -- and a number of summer professional development opportunities. Here's a summary of the remaining contents of this newsletter:

1. Photos and slides from SEPS Spring Meeting
2. Free online Mechanics Review Course on MITx (6/1-8/31)
3. NASA offering flight experiences for high school teachers, with stipend (6/17-21)
4. National AAPT is holding a t-shirt design contest (deadline 6/20)
5. Opportunity to playtest Google Play for Education
6. EM & Chemistry Modeling workshops in NYC (7/22-8/9) (see also PA & NJ workshops below)
7. Save the date for CSAAPT's Fall 2013 Meeting (11/8-9)
8. AAPT National Summer Meeting July 13-17 in Portland, OR (next deadline 6/6)
9. Rutgers University offers free Physics Union Mathematics Workshop (6/24-6/28)
10. Summer Opportunities at Penn LRSM: RET, PSSI, Teacher Workshops
11. 2013 Lunar workshops for Educators in Greenbelt, MD (6/24-28, 7/8-12)
12. Astrobiology for Educators at Penn State Abington (7/22-26)
13. Full-time opening for Senior Lecturer at Penn State Harrisburg (posted 5/21)
14. Physics job opening for adjunct at Chestnut Hill College (fall 2013, posted 5/20)
15. Job opening for Physics teacher at Delaware County Christian School (posted 5/10)
16. Job opening for Physics teacher at Jack M Barrack Hebrew Academy (posted 5/13)
18. Friends Select seeks Upper School Chemistry Teacher (posted 3/8)
19. Westtown School seeks Summer Science Institute Director (part-time)
20. Resources & Workshops available at NASA Teacher Center in NJ
21. Widener University's Science Teaching Center offers STEM Teacher Exchange
22. AMTA offers Modeling Workshops this summer in PA, NJ and around the country (deadline 6/1 for South Jersey Institute)
23. Penn Monthly Outreach Lectures for Science Teachers at LRSM (6/13)
24. National Aerospace Training and Resource Center: Free Summer 2013 Teacher Programs

(July 2013)

- 25. Online Interactive Multivariable Calculus Course (Fall 2013)
- 26. Online Interactive Digital Electronics Course (Summer 2013)
- 30. AP Physics Free-Response Questions are up (exam was 5/13)
- 31. Cool physics links: Physics Careers, Dielectrics, Baseball
- 32. 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'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 -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
AP & Honors Physics Teacher
Archmere Academy
Claymont, DE 19703

1. PHOTOS AND SLIDES FROM SEPS SPRING MEETING

Photos and slides from April's meeting are online. If you have additional photos to contribute, please send me an email and we can link them from our website and in the newsletter.

Mary Chessey, of the Drexel SPS chapter, has posted an album of photos from the conference:

<https://plus.google.com/u/0/photos/100714909650521432639/albums/5873172799956424993>

In addition, slides from the talks are available on SEPS's website, <http://www.physics.upenn.edu/aapt/>, including talks by:

- * Sarah Demers: Higgs Hunting at ATLAS
- * Dave Goldberg: How to make yourself a physics pundit
- * Michelle Dolinski - Diversity in Physics
- * Aline McNaull - Working with Congress: What can physicists bring to the table?

2. FREE ONLINE MECHANICS REVIEW COURSE

<https://www.edx.org/course/mit/8-mrevx/mechanics-review/748>

Mechanics ReView is a second look at introductory Newtonian Mechanics. It will give you a unified overview of mechanics that will dramatically increase your problem-solving ability. It is open to any students who meet the prerequisites (see right), but is especially designed for teachers and those who want to improve their existing understanding of mechanics. Newtonian mechanics is the study of how forces change the motion of objects.

This course begins with force, and moves on to straight-line motion, momentum, mechanical energy, rotational motion, and angular momentum. Optional units include oscillations, planetary orbits, and a review of multi-concept problems.

Our approach to mechanics is a unique one. Through worked examples and online texts we introduce a strategic overview of core concepts in mechanics. This overview couples with a new approach to problem-solving that will help you break down and solve multi-concept problems. By choosing a system of objects, defining their interactions, and deciding on a model to use to describe them, you will come to solve physics problems more easily and more systematically.

The road to "easy" goes through "hard." This course is more challenging than a standard high school or introductory college physics offering. We will help you become a more expert problem solver, and that process involves solving a variety of problems, in many different ways, with our new approach. The reward is stronger problem-solving ability that carries over to other areas in physics.

Take this course to better organize your mechanics knowledge, to prepare for AP or advanced standing exams, to teach more effectively, or if you enjoy attacking challenging problems!

If you are a teacher looking to improve your knowledge of mechanics, or to learn new approaches to teach your students, we encourage you to sign up. Our approach has been researched carefully and has proven effectiveness when it comes to preparing students for later courses.

Teachers in the United States, and especially in Massachusetts, can receive extra benefit from this course. We offer Professional Development Points (PDPs) at no charge to teachers in Massachusetts who complete our course. If you are in a different state, we instead offer Continuing Education Units through the American Association of Physics Teachers. There is a fee for this certificate.

3. NASA OFFERING FLIGHT EXPERIENCES FOR HIGH SCHOOL STEM EDUCATORS: WALLOPS ROCKET ACADEMY FOR TEACHERS (WRATS)

NASA Wallops Flight Facility will host the third Wallops Rocket Academy for Teachers June 17 – 21 at NASA Wallops Flight Facility (WFF) located on the Eastern Shore of Virginia near Chincoteague Island. We would appreciate your help in disseminating this information to high school STEM educators including science, technology, engineering and mathematics immediately. Due to government sequestration, all education programs required approval before soliciting for participants. There is a very brief turnaround time on this workshop. Spaces are limited to 20 teachers so please do not delay sharing the information.

The workshop will provide a *\$1000 stipend to offset the expenses of attending the weeklong workshop. Participants will work alongside NASA's Sounding Rocket Program Office engineers to build and launch a payload aboard a 'WRATS' model rocket. In addition, this unique rocketry workshop culminates with the launch of a Terrier-Orion rocket on Thursday, June 20. Arrangements have been made for a block of rooms on-site at the Wallops dorms at a cost of \$49.00 per night for a single room (non-taxable total for 5 nights = \$245). Once we have confirmed your registration, information regarding accommodations will be provided.

Anyone interested in attending this authentic rocketry workshop should contact Linda Sherman, Education Specialist, linda.a.sherman@nasa.gov or 757-824-2634. Please be sure to include an email address and phone number where you can be reached outside of the normal school day/year. We encourage Earth science, physics, astronomy, chemistry,

biology, environmental and general science educators to attend as well as all mathematics, computer science, engineering and technical educators.

More information at: <http://education.wff.nasa.gov/>

Please feel free to share this information with your friends and colleagues.

* Requirements to receive the \$1000 stipend are completion of the full weeklong experience, a classroom implementation plan, workshop survey, and evaluation. Stipends will be issued within a few weeks after the end of the workshop.

4. NATIONAL AAPT IS HOLDING A T-SHIRT DESIGN CONTEST

Would you like to win \$100? Well, we're looking for creative people of all ages to submit designs for our Summer Meeting T-Shirt Design Contest. The winning design will be placed on our new t-shirt which will be sold during the 2013 AAPT Summer Meeting in Portland, OR.

We are accepting submissions from the following:

* Current AAPT members

* Former AAPT members

* Students (Any level and do not have to be members of AAPT)

If you're not a designer, don't worry. We'd love for you to invite your students to submit a design. Please download and post the contest flyer.

http://www.aapt.org/Programs/contests/upload/TShirtContest_0513_FLYER.pdf

Also, please do us a favor by forwarding this email to your colleagues as well as art and design instructors and encourage them to pass on the information to their students. Students do not have to be physics or science majors to participate. It's open to all majors and concentrations and to students of all ages!

We will produce a limited number of summer meeting t-shirts and a portion of the proceeds will go towards the AAPT Student Fund.

For the complete description and submission information for the Summer Meeting T-Shirt Design Contest, please click here:

<http://www.aapt.org/Programs/contests/2013tshirtcontest.cfm>

5. 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/>

6. EM & CHEMISTRY MODELING WORKSHOPS IN NYC

There are still a few spots left in our summer 2013 Modeling Instruction Workshops in Chemistry and in Electricity and Magnetism. (Mechanics is sold out!) Fee is \$450 for 3 weeks from July 22 to Aug 9 at Columbia Teachers College, NYC. Certificates and/or graduate credit available. Don't miss this chance to join the fun at a genuine bargain price!

NOTE: We are limiting the number of registrations to 24 (the capacity of our labs), and if

you sign up after we reach that limit, you will be on a waiting list. However, especially in E&M, it is likely that some of the current registrants will have to cancel, and we will be promoting people soon from the waiting list to fill those spots. We are also posting this notice on the Modeling listserv as well as sending it out to a wide variety of NYC, NJ and CT teachers. So if you are interested, please do not hesitate to register ASAP!

The Chemistry Workshop is open to anyone with a year's study of algebra- and trig-based chemistry. Led by Larry Dukerich and Donghong Sun. Register (for free) at <http://ptnysummerchemistry1.eventbrite.com>. We will send instructions about payment to you via email. Details below.

The E&M Workshop is open to anyone who has completed a previous intensive Summer Modeling Instruction Workshop (usually in Mechanics or Chemistry) and a course in algebra- and trig-based physics including electricity and magnetism. Led by Michael Crofton and Mark Schober. Register for free at <http://ptnysummerandm.eventbrite.com>. We will send instructions about payment to you via email. Details below.

In both 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>. Both 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.

THE CHEMISTRY WORKSHOP : 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.

THE ELECTRICITY AND MAGNETISM WORKSHOP: 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. In this workshop teachers will work through coherent model-centered materials for high school electricity and magnetism from a microscopic perspective to develop a deep understanding of content and how to teach it effectively. The primary focus is on first-year physics courses that incorporate algebra and trigonometry. To develop familiarity with the materials

necessary to fully implement them in the classroom, teachers will work through the activities, discussions and worksheets, alternating between student and teacher modes, as in the mechanics or chemistry workshops.

The workshop will begin with the study of electric charge and the electric fields produced by charges. Next the workshop will delve into electrical energy and the concept of electric potential. Following that the circuit unit begins with development of the surface charge model as a mechanism for setting up the electric fields that produce a steady state circuit. After finishing the study of circuits, the workshop will investigate magnetic fields and magnetic forces, finishing with electromagnetic induction.

7. 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) 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.

8. AAPT NATIONAL MEETING THIS JULY IN PORTLAND

The 2013 AAPT Summer Meeting will be held this July 13-17 in Portland, Oregon at the Hilton Portland and Executive Tower with weekend workshops at Portland State University. The theme will be "Going Green with Portland". The early bird registration deadline of May 10 has passed; the next deadline is the Advanced Deadline, at a rate of \$484.

Much more information is available here: <http://www.aapt.org/Conferences/SM2013/>

9. RUTGERS UNIVERSITY OFFERS FREE PHYSICS UNION MATHEMATICS WORKSHOP

Physics Union Mathematics (PUM) Workshop
Rutgers University June 24th –28th

To sign up click on (the workshop is free)

<https://sites.google.com/a/gse.rutgers.edu/pumworkshop/>

Rutgers invites high school physics teachers, physical science teachers, and middle school physical science teachers to spend a week in June learning how to implement Physics Union Mathematics (PUM) curriculum. This workshop is offered at no cost.

Students learn physics by engaging in practices similar to that of physicists constructing and applying knowledge.

- Special focus on mathematical reasoning that strengthens students' reasoning abilities

in both math and physics.

- Students learn to collect data and to represent them in multiple ways, to use proportional reasoning to find patterns in the data, to explain them and to test their explanations in new experiments.
- Students work in groups designing their own experiments and have ample opportunities to pose and answer their own questions.
- PUM materials help teachers build a learning community in the classroom.
- Integrated videos of concept-developing physics experiments from the award winning website Rutgers Physics Teaching Technology Resource <http://paer.rutgers.edu/pt3>
- Pervasive use of the award winning PhET simulations from the University of Colorado <http://phet.colorado.edu>

PUM modules contain lesson activities, homework questions, daily quiz questions and final tests. They use simple equipment that any school is likely to have. In case of the lack of needed equipment, Rutgers has a small lending library. The modules work with any textbook and can be implemented “as is” or used to supplement any materials that the teacher already uses.

During the workshop the participants will:

- Improve their understanding of physics content, process, and specifically different productive representations such as motion diagrams, force diagrams, energy bar charts, graphs, and mathematical representations.
- Improve their understanding of student ideas and productive ways to help students learn.
- Learn about PUM philosophy and general module structure.
- Do most of the module activities for the modules kinematics, dynamics, momentum, energy, and electrostatics (including design labs) and reflect on the process.

During the subsequent school year the participants will:

- meet every two months to discuss their class progress
- have a listserv to share their ideas, questions, etc.

Logistics

Who: The workshop will be led by R. Zisk and S. Brahmia (Rutgers) and NJ high school and middle school teachers who participate in the development of the PUM modules and use them in their instruction (D. Bugge, and J. Flakker)

When and Where: The workshop will run from 9 am to 4 pm June 24th through June 28th at the Graduate School of Education, room 25A.

Cost: \$0. Lunch is not included, but we will have coffee and pastries in the mornings.

Parking: The participants will have a permit for the week of the workshop.

Your administration is welcome to visit any time but the best time is the morning of the first day of the workshop.

If you are interested, please contact Rob Zisk at [robert.zisk -at- gse.rutgers.edu](mailto:robert.zisk-at-gse.rutgers.edu)

10. MATERIALS SCIENCE WORKSHOPS FOR TEACHERS AT PENN LRSM

The University of Pennsylvania's Lab for Research on the Structure of Matter is offering summer Teachers Workshops on (inexpensive) materials-related experiments for schools. Three one-day workshops will be given in August (dates to be determined) on thermal properties of materials, mechanical properties of materials, and culinary materials.

For details go to Penn LRSM's website www.lrsm.upenn.edu/outreach, or contact Andrew

R. McGhie: 215-898-6461 or at mcghie@lrsm.upenn.edu

11. 2013 LUNAR WORKSHOPS FOR EDUCATORS IN GREENBELT, MARYLAND

NASA's Lunar Reconnaissance Orbiter, or LRO, mission is sponsoring a pair of workshops for educators of students in grades 6-9. These workshops will focus on lunar science, exploration and how our understanding of the moon is evolving with the new data from current and recent lunar missions.

The Lunar Reconnaissance Orbiter has allowed scientists to measure the coldest known place in the solar system, map the surface of the moon in unprecedented detail and accuracy, find evidence of recent lunar geologic activity, characterize the radiation environment around the moon and its potential effects on future lunar explorers and much, much more!

Workshop participants will learn about these and other recent discoveries, reinforce their understanding of lunar science concepts, gain tools to help address common student misconceptions about the moon, interact with lunar scientists and engineers, work with LRO data and learn how to bring these data and information to their students using hands-on activities aligned with grades 6-9 National Science Education Standards and Benchmarks.

Workshops will take place: June 24-28 and July 8-12, 2013, at NASA's Goddard Space Flight Center in Greenbelt, Md. Workshop participants will have the opportunity to tour the LRO Mission Operation Center and the Goddard spacecraft testing facilities.

Each workshop will be limited to 25 participants. Interested educators are encouraged to apply early to secure a spot. Qualified applicants will be accepted in the order they apply. For more information and to register for the workshops, visit

<http://lunar.gsfc.nasa.gov/lwe/index.html>

Questions about these workshops should be directed to Katie Hessen at [Katie.K.Hessen -at- nasa.gov](mailto:Katie.K.Hessen-at-nasa.gov)

12. ASTROBIOLOGY FOR EDUCATORS AT PENN STATE ABINGTON

Is There Life Beyond Our Planet? And How Would We Know? This course is designed to provide teachers in grades 4-12 with science content related to the cutting-edge field of astrobiology. Explore the latest discoveries in the search for conditions needed to support life on other planets, and learn how to integrate this multidisciplinary topic into existing curricula while still meeting state science requirements. This workshop will be held July 22-26th at Penn State Abington.

To learn more about this opportunity, see <http://www.abington.psu.edu/continuing-education/astrobiology-educators>

Questions about the workshop should be directed to Eva Klein at [evaklein -at- psu.edu](mailto:evaklein-at-psu.edu)

13. FULL-TIME OPENING FOR SENIOR LECTURER AT PENN STATE HARRISBURG

Penn State Harrisburg, School of Science, Engineering, and Technology invites applications for a full-time, non-tenure track Senior Lecturer/Lecturer position in Physics effective August 2013. The successful candidate is expected to teach a broad range of undergraduate Physics, Astronomy, and/or Earth Science courses and laboratories. In addition, all full-time faculty are expected to engage in scholarly activities, participate in University/College/Program and professional service activities, 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 a

commitment to excellence in college teaching. Information about the College may be found at www.hbg.psu.edu. This is a fixed-term appointment eligible for continuation.

Applicants should submit current curriculum vitae, three letters of reference, and a personal statement of teaching philosophy to Physics Senior Lecturer/Lecturer Search Committee, c/o Mrs. Dorothy J. Guy, Director of Human Resources, Penn State Harrisburg, Box AAPT-39576, 777 W. Harrisburg Pike, Middletown, PA 17057-4898 or via email to HBG-HR@LISTS.PSU.EDU. Position is open until filled. Employment will require successful completion of background check(s) in accordance with University policies. Review of applications will begin immediately and continue until the position is filled. Penn State is committed to affirmative action, equal opportunity and the diversity of its workforce.

14. PHYSICS JOB OPENING FOR ADJUNCT AT CHESTNUT HILL COLLEGE

Chestnut Hill College is seeking an adjunct to teach a calculus-based college physics course starting in fall 2013. If you are interested, please send your resume to: Kathleen Duffy, SSJ, PhD, Professor of Physics
Chestnut Hill College, 9601 Germantown Avenue, Philadelphia, PA 19118
215-248-7197, [kduffy -at- chc.edu](mailto:kduffy-at-chc.edu)

15. JOB OPENING FOR PHYSICS TEACHER AT DELAWARE COUNTY CHRISTIAN SCHOOL (posted 5/10)

<http://www.dccs.org/page.cfm?p=303>

DC is in need of a full-time High School Science teacher with a strong Physics background for the 2013-14 school year. A Bachelor's Degree in Science is required for this position. Previous teaching experience, ACSI educator certification, PA state teacher certification, and the ability to coach athletic teams or lead co-curricular activities are desired. DC seeks to educate students who will serve God and impact the world through biblical thought and action. Please check the school's website (www.dccs.org) regarding personal faith alignment and send a resume to Janet Grant at [jgrant -at- dccs.org](mailto:jgrant-at-dccs.org).

16. JOB OPENING FOR PHYSICS TEACHER AT JACK M. BARRACK HEBREW ACADEMY (posted 5/13)

The Jack M. Barrack Hebrew Academy located in Bryn Mawr, PA, has a full time opening for a science teacher starting September 2013. The teaching load will include 3 Middle School Science classes and one High School Chemistry class. Experience is preferred. Based upon the applicants, the position may be split into two part time teaching positions. Send a cover letter and resume to [raugust -at- jbha.org](mailto:raugust-at-jbha.org)

17. JOB OPENING FOR PHYSICS TEACHER AT EPISCOPAL ACADEMY (posted 4/19)

<http://www.episcopalacademy.org/news/detail.aspx?linkid=1350&moduleid=23>

The Episcopal Academy is seeking to hire an experienced Upper School Physics teacher who can teach regular, Honors, or AP Physics. Candidates should have a degree in Physics or a closely related field with experience teaching upper level Physics. The ability to work closely with colleagues to coordinate multi-section courses is essential. Interest in mentoring students in science competitions desirable.

Candidates should send a cover letter and resume to [jobs -at- episcopalacademy.org](mailto:jobs-at-episcopalacademy.org) with the subject line "Physics" or via mail to: The Episcopal Academy, 1785 Bishop White Drive, Newtown Square, PA 19073. You may also fax to: 484-424-1606.

The Episcopal Academy does not discriminate in employment opportunities or practices on the basis of race, color, religion, sex, sexual orientation, national origin, age, disability and familial affiliation or any other characteristic protected by law. AA/EEO employer

18. FRIENDS SELECT SEEKS UPPER SCHOOL CHEMISTRY TEACHER

Friends Select School seeks a maternity leave Chemistry teacher for the start of the 2013-14 school year. Successful candidates should have the requisite experience to teach the curriculum left by the teacher. Interested applicants should send all information (resume, cover letter, and list of references) to Science department chair Natalie Mayer Nataliem -at-friends-select.org

<http://www.friendscouncil.org/Library/Jobs/JobZoom.asp?FolderID=742&SessionID={43D4407A-D254-481B-9A62-7962486F2D0E}&JobID=3311>

<http://careers.nais.org/jobs#/detail/5419744/1,false>

19. WESTTOWN SCHOOL SEEKS SUMMER SCIENCE INSTITUTE DIRECTOR

<http://www.friendscouncil.org/Library/Jobs/JobZoom.asp?FolderID=742&SessionID={ECCC A550-813C-4264-B1EC-FE2E0E828185}&JobID=3277>

Westtown School, founded in 1799, is a Quaker, co-educational school for grades PreK - 12. The school is located on a 600 acre campus in Westtown, Chester County, a suburb of Philadelphia. Westtown has approximately 780 students and over 200 employees.

<http://www.westtown.edu>

Position Available: Westtown Summer Science Institute Director

Job Description: Part Time, Administration 6th, 7th, 8th, 9th, 10th, 11th, 12th

Applications must be received by: June 30, 2013

Job posting expiration date: 7/1/2013

Applicants should supply the following materials: Cover Letter, resume, and references

Westtown Summer Science Institute Director: Westtown School has an immediate opening for a part-time (50%) Westtown Summer Science Institute Director. With a newly renovated and expanded Science Center opening January of 2014, Westtown will launch a research intensive summer institute for middle and high school students in June of 2014. The founding Director will oversee all aspects of the creation and running of the program. Responsibilities include envisioning and developing the program, finances, marketing, recruitment of students, hiring faculty, creating partnerships with local industry and universities, fundraising for scholarships, and managing the residential and day program. The position is intended to expand, creating additional science programming for adults and youth throughout the year. Send cover letter and resume to L. Jay Farrow, Assistant Head of School at employment-at-westtown.edu

20. RESOURCES AND WORKSHOPS AT NASA TEACHER CENTER IN NJ

You may have seen the beautiful glossy photos and other resources from the NASA Educator Resource Center that Anne Tabor-Morris brought to our spring meeting. More resources are available at the center's monthly open house:

New Jersey's only NASA Educator Resource Center OPEN HOUSE

Located at Georgian Court University, 900 Lakewood Avenue, Lakewood, NJ

3rd Sat of the month in the Library 10:30 am-12noon during the school year (May 18, 2013 and June 15, 2013 for the rest of this school year)

Free posters, lithographs, calendars, ideas for teachers (only).

Get on our email list: Email [nasa -at- georgian.edu](mailto:nasa-at-georgian.edu)

We are also happy to serve Eastern Pennsylvania as the NASA ERC of PA is located in Pittsburg.

Teacher Professional Development Workshop

Lunar Rock and Meteorite Workshop (6 hours)

NASA Teacher training PLUS get certified to bring the NASA Lunar Rocks (yes from the moon) and Meteorites into YOUR classroom.

FREE but reservations required. Limited seats available (waiting list will be kept).

Get 6 hours of Professional Development (certified under State of New Jersey)

Run by a Goddard Space Flight Center NASA Specialist Rich Varner

<http://education.gsfc.nasa.gov/pages/listserv.html>

At McCauley Heritage Center, Georgian Court University, Lakewood, NJ 08701

Thursday June 27, 2013, 9 am to 3 pm (bring your own brown bag lunch)

Email: [nasa -at- georgian.edu](mailto:nasa-at-georgian.edu) to register, seats are limited to 34.

If you are looking up directions to Georgian Court University using GPS, MapQuest, Google Maps, or similar, the best address to use is 517 Ninth Street, Lakewood, NJ 08701.

Teaching Astronomy or Geology? Rock Around the World: <http://ratw.asu.edu/>

21. WIDENER UNIVERSITY'S SCIENCE TEACHING CENTER OFFERS STEM TEACHER EXCHANGE [*Follow up???*]

When – spring 2013 or fall 2013; approximately every 6 weeks

Where – Widener University Science Teaching Center (213 Kirkbride Hall)

Who – Middle Level and Secondary Teachers

The STEM Teacher Exchange is based on a teacher-led professional development model where local teachers come together and share ideas. Each exchange will be composed of two parts: The first part will be problem-based where teachers help one another solve problems through a process called "Tuning Protocol." Basically a few identified teachers bring an issue for sharing with the group. It might be something they are having trouble with in the areas of content, pedagogy, or assessment. Presenting teachers can bring along copies of lesson plans, student work or whatever else will help the group to understand the problem. The goal is to help the presenting teacher improve or "fine tune" his/her work. The scope of the group's work will largely be determined by a focusing question framed in advance by the presenting teacher. Since we will have this information before the actual meeting, other participating teachers can bring along artifacts that they use to address the issue being discussed. Widener University faculty from a variety of backgrounds (the sciences, mathematics, and education) will also be available to join in as problem solvers too.

Some themes that in-service teachers are especially interested in may include (1) exploring/assessing students' understanding/thinking/misconceptions based on their work; (2) how to respond to students' errors/misconceptions, such as how to help students correct mistakes; (3) classroom management; (4) engaging lesson planning; (5) pedagogical content knowledge, i.e., how to unpack content knowledge in ways that are comprehensible to students; (6) or sharing self-made videos. We may invite different experts on these themes to join us as we attempt to answer teachers' questions and provide substantive feedback.

Our first teacher exchange will be focused on motivating students in math and science classrooms. Once we get started, the topics may be drawn from a list of themes that teachers themselves identify.

First Teacher's Exchange Agenda

4:00-4:20 Welcome and Introduction to Tuning Protocol

4:20-4:50 Tuning Protocol –

~ 5-10 minutes: Presenter – brings one focus question with details based on the problem of motivating students in math and science

~ 5 minutes: Participants – ask clarifying questions and examine presented artifact; Presenter responds openly to questions

~ 10-15 minutes: Participants – provide warm and cool feedback; Presenter does not speak; writes down all ideas for reflection later

~ 5 minutes: Presenter – Summarizes the feedback and selects possible ideas for initial course of action

~ 2 minutes Facilitator: Debriefing – How was this helpful?

5:45-6:00 Top Ten List

~ Teachers will develop a list of issues that they would like to see the Teacher Exchange focus on in future meetings

~ Reflection on the teacher exchange – evaluation and suggestions for moving ahead.

The contact person for Widener's Teacher Exchange is: Nadine McHenry, Ed.D., Director of the Science Teaching Center, School of Education, Innovation, and Continuing Studies, 610-499-4259, 484-410-3806 (cell), ncmchenry -at- widener.edu

22. MODELING WORKSHOPS OPEN THIS SUMMER IN NJ, PA, AND NATIONWIDE

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. A listing of these workshops can be found at:

<http://modelinginstruction.org/teachers/workshops-2013/> The AMTA website also contains other information pertaining to modeling instruction.

I've attached the flyer and the application for the closest Modeling Workshop to Philadelphia, which I (Jillian) actually attended last summer, at Clearview Regional High School in New Jersey, near Rowan University. It was a FREE, interesting, and useful experience, and helped me rethink some of how I teach first-year physics. CRHS is about about a forty-minute drive from my house near Center City. Workshops are also available for Chemistry and Biology, although the Physics program is the oldest and most thoroughly developed. The deadline for the South Jersey institute is June 1.

Here is a full listing of the closest workshops and some more information about them:

SUNY-Buffalo State College

Dates: July 22-August 9

PHY620 (6cr) Powerful Ideas & Quantitative Modeling in Mechanics

leaders: Dr. Luanna Gomez & colleagues

Contact: Luanna Gomez

PHY622 (6cr) Powerful Ideas & Quantitative Modeling in Electricity and Magnetism with

supplements (microscopic models of matter).
leaders: Dr. Dan MacIsaac & colleagues
Modeling workshop master teachers TBA
tuition: \$2245.20 in state, \$3595.20 non residents
some financing available
housing available on campus, approximately \$320 per week
parking permit \$10
Contact: Dan MacIsaac ([macisadl -at- buffalostate.edu](mailto:macisadl-at-buffalostate.edu)) or (716) 878-3802

Teachers College-Columbia University
Dates: July 22-August 9
Content: Mechanics
Leaders: Craig Buzska & TBA
Content: Electricity & Magnetism
Leader: Michael Crofton & Mark Schober
Content: Chemistry I (9 core units)
Leaders: Donghong Sun & Larry Dukerich
Contact: Fernand Brunschwig ([fbrunsch -at- gmail.com](mailto:fbrunsch-at-gmail.com))
Visit the Physics Teachers NYC for details

Clearview Regional HS – Mullica Hills, NJ
Dates: July 8 – 26
Content: Mechanics
Leader: Doug Valette
Content: Chemistry I (9 core units)
Leaders: Jim Navins & Maureen Huhman
Dates: July 29 – August 16
Content: Biology
Leader: Angela Gard
Limited housing is available – \$700 for 20 nights
A brochure with more details is here:
<http://modelinginstruction.org/wp-content/uploads/2012/11/2013-Modeling-brochure.pdf>
Here is an application form:
<http://modelinginstruction.org/wpcontent/uploads/2012/11/SoJerseyModelingInst2013appli.doc>

General Information

Fifty Modeling Workshops in high school physics, chemistry, physical science, and biology will be offered in summer 2013, in many states. Modeling Workshops are peer-led. Modeling Instruction is designated by the U.S. Department of Education as an Exemplary K-12 science program. Some sites offer stipends, usually for in-state teachers. Graduate credit is available at some sites. Pre-service teachers and TYC faculty are welcome too. For general information:
<http://modelinginstruction.org/teachers/workshops-2013/>
Most workshops are described at <http://www.ptec.org/pd>.

Teachers say:

* "After the first year of teaching using the modeling method, I wished I had learned about modeling years ago." - David Braunschweig (retired; consultant for Vernier Software &

Technology).

* In the one year that I have been modeling, I have seen wonderful results.

* [As a graduate student in physics], I discovered the modeling method of instruction to be a rigorous approach to physics instruction on the high school level, and one that is consistent with the way physicists understand the universe - Doug Vallette

* Compared to "traditional" physics teaching, at our school modeling has created:

(A) Larger enrollment in physics and AP Physics

(B) Higher retention of students majoring in engineering and science when they go off to college

(C) Greater quantitative analytical skills

(D) Greater quantitative presentation skills

(E) Much higher ability for "future non-science students" to communicate with science people

(F) No plugging and chugging.

* We have had 3 physics teachers and 5 chemistry teachers enhance their professional development at your ASU modeling workshops. Modeling has made a world of difference in our science courses. -- Ray Howanski

Gwendolyn Hehemann <wendy -at- modelinginstruction.org> is the outreach person for the Modeling Workshops, and can also answer any questions you might have.

23. 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, 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. The theme for this year's lectures is "Advanced Materials: Synthesis, Characterization, and Properties."

All lectures take place at the LRSM, which is located at 3231 Walnut Street, in Philadelphia. Upcoming lectures include:

June 13 -- Mojca Cepic, Physics, University of Ljubljana
"Liquid Crystals"

More information is available at the link below, and in the attached PDF. 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.htm>

24. SUMMER 2013 TEACHER PROGRAMS AT THE NASTAR CENTER

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

NASTAR Center Teacher Professional Development Programming for 2013

Since 2010, more than 150 teachers have attended professional development programs at the National AeroSpace Training And Research (NASTAR) Center in Southampton, PA. The emphasis for teacher programming is on fun, experience-based learning that provides teachers with practical tools and activities that they can apply in a classroom

environment. Teachers can experience a 3-G suborbital spaceflight simulation in the NASTAR Center centrifuge, ascend to 8,000 feet in the altitude chamber, or learn how airplanes are controlled while piloting the GAT II simulator.

For 2013, the NASTAR Center is adding two brand new teacher professional development programs: "The Atmosphere and Weather," and "Exploring the Solar System." The NASTAR Center is an approved provider of Act 48 continuing education hours by the Pennsylvania Department of Education. Each program is worth 8 hours of continuing education.

The schedule for 2013 is as follows:

July 8, 2013, Monday	Flight Physiology
July 9, 2013, Tuesday	500 Years of Flight
July 10, 2013, Wednesday	The Magic of Flight
July 11, 2013, Thursday	Rocket Science
July 12, 2013,	Acceleration
July 15, 2013, Monday	The Atmosphere and Weather
July 16, 2013, Tuesday	Exploring the Solar System
July 17, 2013, Wednesday	500 Years of Flight
July 18, 2013, Thursday	Rocket Science
July 19, 2013,	Acceleration
July 22, 2013, Monday	The Atmosphere and Weather
July 23, 2013, Tuesday	Exploring the Solar System
July 24, 2013, Wednesday	The Magic of Flight
July 25, 2013, Thursday	Rocket Science
July 26, 2013, Friday	Acceleration

The non-profit NASTAR Foundation is sponsoring these programs so they are being offered AT NO COST TO TEACHERS. If you are coming from out of town, we have arranged a meal/room package at a special rate in an area hotel. For enrollment information, contact Greg Kennedy at (215) 355-9100, X 1512, or via email at gkennedy@nastarcenter.com. A registration packet may also be downloaded from the NASTAR Center website, www.nastarcenter.com.

Gregory P. Kennedy
Director of Educational Programs
PHONE +1.215.355.9100 x 1512
FAX +1.267.989.1251

THE NASTAR CENTER
125 James Way | Southampton, PA 18966 USA
www.NastarCenter.com

25. 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/>

26. ONLINE INTERACTIVE DIGITAL ELECTRONICS COURSE

David Abineri (see above) is also offering a Digital Electronics Course, which will cover how logic chips can be connected to solve useful problems, the beginnings of how a computer works and, time permitting, work with a microprocessor.

This course, offered by an experienced Mathematics and Physics Teacher, will be a lab based class investigating digital electronics from simple logic gates to an introduction to microprocessors. Students will build and test their own circuits using computer chips in a safe 5 volt environment and may work with microprocessors if time permits. The class will be very interactive and the size will be limited, NOT just watch and work! There are no prerequisites: physics and electronics topics will be covered as they are needed. Math through Algebra II is helpful, but student interest is the most important thing. Tuition will be \$100, and equipment to build and construct circuits will cost about \$75.

Class size will be limited, first come first served, all details at: <http://summer-electronics.blogspot.com/>

27. AP PHYSICS FREE-RESPONSE QUESTIONS ARE UP

The AP Physics exam was last Monday, and the College Board posted the Free Response questions on Monday. (Some of the free-response questions, anyway -- about half of my students apparently got the secret form.) My personal favorites were E1 and M3. Here are the quick links if you want to check them out:

B-exam:

http://apcentral.collegeboard.com/apc/members/exam/exam_information/2007.html

CM-exam:

http://apcentral.collegeboard.com/apc/members/exam/exam_information/8039.html

CE-exam:

http://apcentral.collegeboard.com/apc/members/exam/exam_information/2008.html

28. COOL LINKS

APS Physics Insight Slideshow about Physics Careers:

<http://www.aps.org/careers/insight/contact.cfm>

In case you ever needed to know the dielectric constant of basic household stuff. Like butter. And bacon: <http://www.microwaves101.com/encyclopedia/Miscdielectrics.cfm>

Maybe more relevant last fall, but here's a GIF that shows Pete Kozma hitting a baseball three times to create a really cool spin:

<http://www.mlb gifs.com/2012/10/hunter-pence-created-the-weird-spin-that-fooled-pete-kozma-by-hitting-the-ball-three-times/>

An NPR article on cultural differences in learning:

<http://www.npr.org/blogs/health/2012/11/12/164793058/struggle-for-smarts-how-eastern-and-western-cultures-tackle-learning>

29. 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>