

Hi everyone!

We'll be sending out registration information for our own spring meeting at Drexel (4/26-4/27) shortly, as soon as we've finalized the prices for everything and the schedule. I hope you plan to attend -- we have some awesome speakers lined up, including a plenary on Friday night by Sarah Demers of Yale University, some exciting workshops on Saturday, and Saturday night's Iron Physics Chef competition!

Here's a summary of the remaining contents of this newsletter:

1. NJAAPT's annual meeting at Princeton (advance registration deadline 3/9)
2. SEPS AAPT's annual spring meeting at Drexel (4/26-4/27)
3. Robert Malkovsky (Penncrest HS) Memorial Scholarship fund
4. University of Delaware offers Engineering 101 event for high school girls (registration deadline 3/11, event 3/15)
5. Kaczmarczik lecture and high school open house, Drexel, 4/15
6. Teachers Stargazing Nights at Widener (3/12, 4/16)
7. Widener University's Science Teaching Center offers STEM Teacher Exchange
8. Penn State Nanotech workshop (deadline 3/29 for 5/7-9 workshop)
9. AMTA offers Modeling Workshops this summer in PA, NJ and around the country (deadline 6/1 for South Jersey Institute)
10. AIM Academy seeks Secondary Science Teacher (posted 2/4)
11. Friends Select seeks Upper School Chemistry Teacher (posted 3/8)
12. Penn Monthly Outreach Lectures for Science Teachers at LRSM (3/14, 4/4, 5/16)
13. Penn LRSM Science Cafes in Wilmington and Philadelphia (2/18, 3/11, 3/13, 4/1, 4/10)
14. Army-funded High-School and Undergraduate Apprenticeship Programs accepting applications (due 4/1)
15. Summer 2013 Teacher Programs at the NASTAR Center (July 2013)
16. Physics Olympiad answers & semifinalists posted
17. Fun links: NY Times applications, a NOVA special on the Earth From Space, Electrostatic Pong
18. 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) 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
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1. REGISTER NOW FOR NJAAPT'S ANNUAL MEETING

NJAAPT's annual meeting will occur March 15-16, with a theme of "Hot Topics in Physics." The advance registration deadline is March 9th, and students are welcome to register for the Saturday portion at a reduced rate. (I am apparently driving up with a van full of excited students.) It's a good opportunity for them to get some exposure to cutting-edge physics and meet experts in the field. The full schedule is attached.

Walk-in registration is available for Saturday's events but not Friday's; as you might expect, it is slightly more expensive.

Highlights include the following speakers:

Friday, March 15, 7:30 PM -- Andrew Zwicker, Princeton Plasma Physics Lab

"Fusion 2013: Just How Close Are We to Creating a Star on Earth"

Saturday, March 16, 9:30 AM -- Saurabh Jha, Rutgers University

"The Expanding Universe"

12:25-2:15 PM -- Nima Arkani-Hamed, Institute of Advanced Study

"The Inevitability of Physical Laws: Why the Higgs Has To Exist"

2:30-3:30 PM -- E&M Demo Show, Chris Tully, Princeton University

For more information, please check out the following links:

<http://njaapt.org/mainframe.htm>

<http://njaapt.org/CalendarOfActivities/2012->

[2013/Registration%20NJAAPT%20Spring%20Meeting%202013.pdf](http://njaapt.org/CalendarOfActivities/2012-2013/Registration%20NJAAPT%20Spring%20Meeting%202013.pdf)

<http://njaapt.org/CalendarOfActivities/2012->

[2013/Schedule%20for%20NJAAPT%20Spring%20Meeting.pdf](http://njaapt.org/CalendarOfActivities/2012-2013/Schedule%20for%20NJAAPT%20Spring%20Meeting.pdf)

2. SEPS AAPT's ANNUAL SPRING MEETING AT DREXEL

Our annual spring meeting will take place Friday, April 26 and Saturday, April 27. (Note that this is different from the originally intended weekend, due to space conflicts.) It will be a joint meeting with Drexel's (undergraduate) Society of Physics Students (SPS) section, and the theme will be "Communicating Physics".

This joint meeting will feature:

* Dr. Sarah Demers, Assistant Professor of Physics at Yale University, as the Friday evening plenary speaker (tentative topic: particle physics at CERN and the Higgs boson)

* Ken Fink, President and Founder of Wondergy, as the MC for a special Saturday evening event in collaboration with the Philadelphia Science Festival

* Saturday workshops by Doug Valette, Unionville High School, on "Modeling Instruction in Physics"; Aline McNaull, American Institute of Physics Policy Associate, on

"Communicating Physics to Policymakers"; and Dr. Dave Goldberg, Drexel Professor of

Physics, on "Popularizing Science"

* Contributed talks, demonstrations, and posters

* * * and more!

Registration information will be posted in the next week, as soon as schedules, topics, and prices are finalized.

3. ROBERT MALKOVSKY MEMORIAL SCHOLARSHIP FUND

Last month Robert Malkovsky, a physics teacher at Penncrest High School in Media, Pennsylvania, passed away after a long battle with pancreatic cancer. "Mr. Mal" as his students knew him, taught physics at Ridley, Radnor, and Penncrest High Schools. At Penncrest he also coached the Physics Olympics team and mentored and befriended countless students in and out of the classroom. For 40 years he dedicated his life to teaching and all those around him were fortunate enough to enjoy his boundless energy right up to the end of his life. News of his death spread quickly throughout the community, and the outpouring of emotion that followed was indicative of the lasting impression he left on so many. Mr. Mal was an incomparable educator, mentor, confidant and friend. His energy and spirit pervaded everything he did in and out of the classroom. Though we mourn his passing, we may also celebrate his life and count ourselves better off for having known him.

To that end, an effort is underway to establish a memorial scholarship dedicated to Mr. Mal and his legacy. Many were inspired and encouraged to enter the sciences thanks to his guidance, while many more came to a better understanding of physics thanks to his tireless effort, creativity and artistry. Therefore, those who remember him are seeking to create a yearly scholarship for a graduating Penncrest senior entering the sciences as a fitting tribute and a lasting remembrance.

Dr. William Kane, a professor at Penn and former student of Mr. Mal's, writes:

"He was quite frankly one of the best educators many of us have ever been fortunate enough to know, and his tireless devotion to his students left a lasting legacy that has traveled through several generations of our community.

"In an effort to extend that legacy a group of alumni are establishing a scholarship fund in his memory. We're setting out to endow awards for a male and female graduating senior at Penncrest who will be majoring in a STEM field in college. Many of us, me included, were inspired and encouraged to enter the sciences thanks to Mr. Mal's guidance, and we feel encouraging others to do so is a fitting remembrance."

Mr. Mal's family, friends and colleagues will have an active role in awarding the yearly scholarship, and they ask for your support and generosity to continue his legacy for future generations. Mr. Mal was an incomparable educator who epitomized the dedication and love of learning that so many of you bring to the classroom every day. For more information and to donate to the scholarship, please visit the website at,

<http://www.malsmemorialfund.com/index.html>

All donations will be tax deductible through The Delaware County Community Foundation via a fund (501 (c)(3)) under the name "The Robert Malkovsky Memorial Fund." Checks may also be mailed to: The Robert Malkovsky Memorial Fund, c/o DCCF, P.O. Box 496, Wayne, PA 19087

4. UNIVERSITY OF DELAWARE OFFERS ENGINEERING 101 EVENT FOR HIGH SCHOOL GIRLS

Alpha Omega Epsilon, a sorority comprised of undergraduate female engineering students

at UD, is hosting an extraordinary even for girls interested in engineering. Engineering 101 brings female high school students to UD, provides them with information about and activities by the College of Engineering through a full-day session.

As you well know, women are often under-represented in the field of engineering and, research shows, bringing them into contact with like-minded students and role models is one way to enjoyably address this issue. I hope that you will spread the word about this event to all interested young women.

There is still room for a few more students, teachers and parents, so if you know of anyone who is interested in attending, please encourage them to complete the attached registration form and return it via email to Bri Henry blhenry -at- udel.edu or to Terrie Kalesse via fax at 302-831-7399 by 5PM on Monday, March 11, 2013. Once the registration closes, all participants will receive an electronic copy of the agenda, a map, and parking instructions. The contact people if you have questions are: Theresa M. Kalesse, Academic Support Coordinator, Office of Academic Advisement, Student Development & Support, College of Engineering, 141 Dupont Hall, Newark, DE 19716, (P) 302-831-0836, (F) 302-831-7399, www.engr.udel.edu; and Melissa Jurist, Academic Program Manager, UD K-12 Engineering, College of Engineering, University of Delaware, 146 Dupont Hall, Newark, DE 19716, 302-831-6316, mjurist -at- udel.edu

5. KACZMARCZIK LECTURE AND HIGH SCHOOL OPEN HOUSE AT DREXEL

The Drexel University Department of Physics cordially invites you to the 18th Annual Kaczmarczik Lecture, "Superposition, Entanglement, and Raising Schrödinger's Cat", Dr. David Wineland, Winner of the 2012 Nobel Prize in Physics, Monday, April 15 2013, 3:30 PM, Main Building, 3141 Chestnut Street, Philadelphia, PA 19104.

In 1935, Erwin Schrödinger, one of the inventors of quantum mechanics, illustrated his discomfort with the theory by pointing out that its extension to the macroscopic world could lead to bizarre situations such as a cat being simultaneously alive and dead, a so-called superposition state. Today, we can create similar situations on a small scale, such as putting an atom in a "bowl" and placing it on the left and right sides of the bowl simultaneously. Superpositions might be useful for computation. For example, two energy levels in an atom, labeled "0" and "1," can be used to store information like the bits in our laptops. However, as in the atom/bowl experiment, we can arrange the quantum bit to be in a superposition, thereby storing both states of the bit simultaneously. This property leads to a memory and processing capacity that increases exponentially with the number of bits. This and a related property called "entanglement" would enable a quantum computer to efficiently solve problems that are intractable on normal computers. So far, scientists have constructed quantum computers composed of only a few bits, but with advances in technology, we believe a useful device may someday become a reality.

Dr. David Wineland received a B.A. from the University of California, Berkeley in 1965, and a Ph.D. in physics from Harvard University in 1970. After a postdoctoral position at the University of Washington, he joined the National Bureau of Standards (now the National Institute of Standards and Technology) in Boulder, Colorado. He is a NIST Fellow and leader of an experimental group that explores the applications of laser-cooled trapped atomic ions, including the development of high-performance atomic clocks, research on quantum information processing, and tests of fundamental physical laws. Wineland's awards include the 2012 Nobel Prize in Physics, the Department of Commerce Gold Medal,

the Society of Optical and Quantum Electronics' Einstein Medal for Laser Science, the APS' Arthur L. Schawlow Prize in Laser Science, the International Award on Quantum Communications, the Optical Society of America's Frederic Ives Award, and the National Medal of Science.

The lecture will be preceded by a High School Open House program:

12:00-12:30pm Main Building Auditorium;

12:30-2:30pm Department of Physics Open House

Brief presentations on Biophysics, Astrophysics, Computational Physics, Condensed Matter, Nonlinear Dynamics, Particle Physics, etc. An excellent opportunity for high school students to visit our laboratories and meet in person with our internationally recognized researchers.

2:30-3:00pm Reception

For more information or to register online visit: <http://www.drexel.edu/physics/kacz>

6. WIDENER UNIVERSITY HOSTS TEACHERS' STARGAZING NIGHTS

Widener is hosting two stargazing nights for teachers. Come and see the moon, planets, and stars through Widener's 16-inch telescope! All teachers through the secondary level are welcome.

Two nights: Tuesday, March 12th, 7-8 pm (weather permitting); Tuesday, April 16th, 8-9 pm (rain date: April 23rd)

Space is limited to 20 teachers. To reserve a space, email [tasminkey -at widener.edu](mailto:tasminkey@widener.edu) or by telephone, 610-499-4003.

7. WIDENER UNIVERSITY'S SCIENCE TEACHING CENTER OFFERS STEM TEACHER EXCHANGE

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

8. PENN STATE NANOTECH WORKSHOP

Penn State invites teacher to apply for a Hands on Introduction to Nanotechnology Workshop for Educators which will be held at the Center for Nanotechnology Education and Utilization (CNEU) at Penn State University. The workshop will be offered twice in 2013: May 7 - 9 and again November 12 - 14. This three day workshop utilizes Penn State facilities to teach nanotechnology at an introductory level and also enables the participant to understand how nanotechnology is and will continue to be integral to STEM curriculum and careers.

Financial support to attend the workshop is available for a limited number of qualifying secondary faculty, post secondary faculty and administrators. The support covers the registration fee, travel expenses, and lodging. The form to apply for financial support can be found at <http://nano4me.org/workshops.php> along with the workshop application and sample agenda.

There has been some great feedback on the workshop from past participants. Below is a sampling of attendee feedback from their recent workshop experiences:

"Excellent! Great explanations and on our level"

"Impressive to learn about the partnerships and educational opportunities that are available"

"Really cool! It was nice to actually run the equipment."

"I could easily use this in my classroom"

"The enthusiasm of the presenters was amazing!"

"The excellent interaction of the instructors with the students. They were informative and professional. The explanations coupled with the extensive hands-on aspect.

"The "industry" point of view reiterated important points and gave practical applications - very important and interesting"

"Hands-on fascinating, knowledgeable instructors."

"Great - impressive program"

"Labs were awesome! I love hands-on learning."

"This was one of the best if not the best workshop I ever attended. Thank you"

"All handout materials are excellent! You packed a lot of detailed "science" into nanotechnology while making it easy to understand and retain while we did the hands-on activities. Phenomenal!!!"

"The overall experience gave me an appreciation for the interdisciplinary nature of nanotechnology and its applications"

"Real science!! It has been quite a few years since I learned new scientific techniques. I feel so much more knowledgeable and up to date."

For more detailed information about this workshop, refer to the website at <http://nano4me.org/educators.php>. From this page you will also be able to access information about other remaining 2013 workshop offerings as well as webinars, remote access to equipment, and ready for classroom resources.

We hope that you'll consider joining us. Registration closes on March 29, 2013 for the May introductory workshop. The Workshop application is available at

<http://nano4me.org/workshops.php>

If you have an interest in attending, please apply as soon as possible. Spaces fill quickly. The contact person is: Robert K. Ehrmann, Managing Director, Center for Nanotechnology Education & Utilization (CNEU), Pennsylvania Nanofabrication Manufacturing Technology (NMT) Partnership, NSF National Center for Nanotechnology Applications and Career Knowledge (NACK) Network, Pennsylvania State University, 101 Innovation Boulevard, Suite 112, University Park, PA 16802, [rke2 -at- psu.edu](mailto:rke2-at-psu.edu), 814-865-7558 (Phone), 814-865-3018 (FAX), www.nano4me.org

9. 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.

The Spring meeting will also feature a mini-workshop on Modeling, which will be an excellent opportunity to learn more about this effective instructional strategy.

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.

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 Maclsaac & 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 Maclsaac 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

Visit the Physics Teachers NYC for details

[Click here for further 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

1. Follow these links to a brochure for details and for an application form

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 Information: <<http://modelinginstruction.org/teachers/workshops-2013/>>
<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.

10. AIM ACADEMY SEEKS SECONDARY EDUCATION SCIENCE TEACHER

<http://careers.nais.org/jobs/5122799/secondary-education-science-teacher>

AIM Academy (AIM), a school for children who learn differently, is seeking a full time Secondary Education Science Teacher. Since its launch in 2006, in conjunction with The Lab School of Washington® in DC, AIM has become one of the fastest growing private schools and teacher training centers in the Greater Philadelphia region. This role is a key position at AIM and is ideal for the person who is passionate about improving education for children with learning disabilities.

The candidate who most uniquely qualifies for this position will possess the following:

1. Creativity, a positive outlook, pro-active orientation, coupled with the ability to act as a team player while interacting with students, parents, and peers
2. Entrepreneurial spirit and approach – must enjoy fast-paced environment
3. Unique ability to inspire others to embrace the cutting-edge vision of AIM
4. Highly collaborative approach to developing a cross-curricular, arts-based learning environment for students

5. Extracurricular expectation with our athletic, advisory and activity programs.
6. At least 3 years teaching experience; experience teaching students with learning disabilities a plus
7. PA Certification in Secondary Science Education or Special Education with Praxis test completion in Science areas
8. Expertise in IEP development and progress monitoring using AIMSweb and curriculum-based measurements a plus
9. Exceptional communication skills with parents
10. Experience with a variety of research-based curricula and programs a plus
11. An interest in gaining experience in conducting seminars for educators/administrators; interest in presenting at conferences, writing articles
12. Keen interest in exploring the latest research in learning disabilities and for promoting the dissemination of best practices in the Greater Philadelphia region
13. Established contacts with other educational institutions a plus
14. Exceptional interpersonal skills
15. Exceptional skills in follow-through, organization, writing
16. PA Child Abuse, Criminal Background Check and FBI Fingerprinting required for school employment

Send resume, cover letter and references to Pat Roberts, Executive Director at jobs@aimpa.org

11. 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://careers.nais.org/jobs#/detail/5248387>

12. 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:

- March 14 -- Ivan Dmochowski, Chemistry "Supramolecular Chemistry with Xenon"
- April 4 -- Karen Winey, Materials Science and Engineering "Supramolecular Chemistry with Xenon"
- May 16 -- David Pope, Materials Science and Engineering "Metals: Are They Going Out of Fashion?"

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>

13. PENN OUTREACH SCIENCE CAFE PROGRAM FROM LAB ON THE RESEARCH OF THE STRUCTURE OF MATTER

In October 2010, the LRSM (see above) also began a monthly series of materials-based Science Cafes. These are popular science talks on specific aspects of materials, such as fuel cells or solar power, given by affiliated faculty at a local restaurant or bar in a relaxed setting conducive to setting up a dialogue between the speaker and the audience. These talks begin at 6:30 PM, and are open to the general public, not just to science teachers. The 2013-2013 series has two primary regional locations -- at Stoney's British Pub in Wilmington, Delaware, and at the World Cafe Live in Philadelphia.

Upcoming talks include:

March 11, 2013 -- Jennifer Maas, Conservator, Winterthur Museum, DE

"Using synchrotron radiation to study Matisse: Hand-held x-ray fluorescence in Art & Archaeology"

6:30 PM, Stoney's British Pub, 3007 Concord Pike, Wilmington DE

March 13, 2013 -- Peter Collings, Physics, Swarthmore College

"Liquid Crystals: An Oxymoron Necessary for Life and the Basis of Modern Displays"

Liquid crystals are a phase of matter just like the more familiar phases of matter (solids, liquids, and gases). Yet the properties of liquid crystals are so unique that they are both the fundamental building blocks of biological structure and the basis for the displays found in laptop computers and flat panel televisions (LCDs). The reason for these extraordinary properties is that liquid crystals represent a natural, delicate balance between the absence of all molecular ordering found in liquids and the high degree of molecular ordering found in solids. Additional applications are already in use and more are on the way.

6:30 PM, World Cafe Live, 3025 Walnut Street, Philadelphia PA

April 1, 2013 -- Bill Berner, Physics, University of Pennsylvania

"Free fall and more: the physics of getting down"

6:30 PM, Stoney's British Pub, 3007 Concord Pike, Wilmington DE

April 10, 2013 -- Robert Johnson, Physics & Astronomy, University of Pennsylvania

"Ultrafast DNA sequencing: speed-reading the blueprint of life."

6:30 PM, World Cafe Live, 3025 Walnut Street, Philadelphia PA

For more information, see the attached PDF, or check out the LRSM's website:

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

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

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

The High School Apprenticeship Program (HSAP) is a commuter program for high school juniors and seniors who demonstrate an interest in science, technology, engineering, or mathematics (STEM) to work as an apprentice in an Army funded university research laboratory. Students apprentice with experienced scientists and engineers full-time during the summer or part-time during the school year. Likewise, the Undergraduate Research Apprenticeship Program (URAP) has the SAME description and the SAME application form. Students should apply online NOW, and specify which HSAP/URAP locations they are interested in. The nearest locations to Philadelphia include Penn State and the University of

Delaware, but students may have relatives with whom they could stay for the summer in other locations. All applications are due by 1 April 2013. Don't wait: apply NOW!

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

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

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

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

15. SUMMER 2013 TEACHER PROGRAMS AT THE NASTAR CENTER

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
July 23, 2013, Tuesday
July 24, 2013, Wednesday
July 25, 2013, Thursday
July 26, 2013, Friday

The Atmosphere and Weather
Exploring the Solar System
The Magic of Flight
Rocket Science
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 gkenedy - at- nastarcenter.com. A registration packet may also be downloaded from the NASTAR Center website, www.nastarcenter.com.

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16. PHYSICS OLYMPIAD ANSWERS & SEMIFINALISTS POSTED

Each year, AAPT and the American Institute of Physics (AIP) sponsor a competition for high school students to represent the United States at the [2013 International Physics Olympiad Competition](#). The mission of the U.S. Physics Team Program is to promote and demonstrate academic excellence through preparation for and participation in the International Physics Olympiad.

The first stage of the Physics Olympiad, called the $F=ma$ test, was administered in January, and the answers and solutions have been posted online here:

<http://www.aapt.org/physicsteam/2013/>

It's a fun and challenging set of mechanics problems at the high school level, if you like that sort of thing.

Additionally, the list of semifinalists has been distributed:

<http://www.aapt.org/physicsteam/2013/upload/2013-Semi-Finalists.pdf>

Congratulations should be extended to my colleagues, Robert DeSipio of Conestoga High School (and his student Jedidiah Thompson), Fran Poodry of West Chester East (and her student Nathaniel Chodosh), Bob Schwartz of Harriton High School (and his student Justin Keenan), David Stover of the Charter School of Wilmington (and his student Lei Ding), and anyone else who I haven't noticed is geographically close! I wish their students luck with the semifinal exam.

17. LINKS

Want to integrate news articles and figures into your physics class? Check out this webpage of physics applications in the New York Times: <http://cisephysics.homestead.com/files/NYT.htm>

Art Zadrozny recommends this beautiful NOVA episode on the Earth From Space, as a testament to the wonder of our planet, the Physics that governs it and makes life possible: <http://www.pbs.org/wgbh/nova/space/earth-from-space.html>
Taking images from over 100 satellites orbiting our planet, this 2 hour special pieces together incredible amounts of data into an impressive and understandable picture of the many forces that affect our planet on a daily basis. This is one of the best videos I've ever seen. Find the time to enjoy it.

Matthew Blackman, a physics teacher in Madison, New Jersey, spends a lot of his spare time making free educational physics games for teachers and students around the world to use. The newest addition -- an electrostatic Pong game with fun sound effects and elegant depictions of the paths of charged particles -- was just released today, along with a great worksheet that makes it really solid for a lesson in electrostatics. You can find the game and worksheet free (as always) at www.theuniverseandmore.com

18. 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>