

## Appalachian Section

The 62nd Appalachian Section Meeting was held October 18-19, 2013 at Marshall University, Huntington, WV. Our host, Maria Babiuc Hamilton, assembled an interesting schedule of sessions and activities. Friday events opened with a Welcome from Ronald Bieniek, Dean of the Honors College and an Invited Talk about “Teaching Sustainability Using Physics” by Beth Cunningham, Executive Officer of AAPT. Dinner was served at the Shawkley Dining Room in the Marshall Memorial Student Center.

Nicola Orsini, Chair of Physics and Physical Sciences, opened the Saturday morning session. Six contributed papers were presented followed by a mini-workshop “A Modeling Teaser.” Doug Forrest and Kevin McChesney from the Southern Ohio Section conducted a highly interactive experiment on Rates of Change. All attendees fully engaged and enjoyed the workshop. Four contributed papers rounded out the remainder of the afternoon.

The Appalachian Section Business Meeting was held following lunch on Saturday. Officers elected included:

- Maria Babiuc Hamilton, Marshall University, President
- Hang-Den Luzader, Frostburg State University, President-Elect



Appalachian Section Modeling Teaser Workshop participants.

- John Lynch, Wheeling Jesuit University, Secretary-Treasurer
  - Pam Sharma, Northern West Virginia Community College, Vice-President, High Schools
- Our Fall 2014 Meeting is scheduled for Frostburg State University in Frostburg, MD.

*Gregory Puskar, Section Representative*

## Arkansas/Oklahoma Section



The Arkansas-Oklahoma-Kansas Section Meeting of the American Association of Physics Teachers was held on October 25-26, 2013, at Butler Community College in El Dorado, KS. With nearly 70 different people attending the meeting over the two days students, faculty, and staff members were treated to a number of activities.

The meeting was themed, Physics and Flight: Igniting the interest of students and boosting them to success according to Dr. Anne Gillis, host of the meeting,

*“This year’s theme draws attention to the motivation and success of our students, and I think that when we educators are at our best these follow naturally. The ideas that you, my colleagues, bring to this conference year after year, address these goals. It is always a sincere pleasure to discuss ideas with you, to share stories of trials, tribulation, success, and to learn from you. Your enthusiasm, commitment and love of teaching are contagious.”*

Friday afternoon and evening activities that occurred at the annual conference included:

\*A Tour of National Institute for Aviation Research at Wichita State University

\*The Grizzly Adventures Problem-solving challenge at Butler Community College

A Contributed Poster session with the following presenters and poster titles.

- Carl Rutledge, East Central University (OK)  
*Sunrise/Sunset on the Equinox: A Photo Project for Astronomy Students*
- Karen Williams, East Central University (OK)  
*Managing Increasing Enrollment in Upper Level Laboratories*
- Jim Hicks, Northeastern State University (OK)  
*Better than Flashcards: Using An Electronic Student Response System in General Physics*
- Elena Gregg, Oral Roberts University (OK)  
*Improving Performance through Motivation: Teaching Biology Pre-Med Students Physics*
- Jared Gavin, University of Arkansas at Monticello (AR) w/Anabel de la Cruz, Juan Serna  
*Training Cellular Automata Using a Simple Conquer and Prevail Scheme*

On Saturday, a morning and afternoon set of activities also occurred. These began with a continental breakfast and the presentation of the Kansas Physics Teacher of the Year to Mrs. Penny Blue of Lyons High School. An excerpt from the nomination said, "Penny uses Modeling instruction to engage students. She has implemented a physics course for freshman at Lyons high school. She is also involved in quark-net (a professional development opportunity for teachers in conjunction with Fermilab). She does presentations at KATS Kamp (Kansas Association of Teachers of Science Kamp). She has also led a number of graduate level workshops for in-service teachers at Fort Hays State University, at Pittsburg State University, at the University of New Mexico, and for Wichita USD 259." We celebrate Penny's commitment to physics education with this award.

Here is a list of the morning and afternoon speakers from the presentation session.

#### Contributed Papers

- *Making Physics Relevant: Project Based Learning Approach*, C. Diane Phillips Northwest Arkansas Community College (AR), w/Melody Thomas, NACC
- *KU experience with Cosmic Ray Detectors*, Dave Besson, University of Kansas (KS)
- *SPS Advisers and Gender: Comparing AR-OK-KS to the Rest*, Karen Williams East Central University (OK)
- *Enhancing Interest in STEM through Robots*, Chris Pettit, Emporia State University (KS)
- *Modeling Instruction in Kansas*, Earl Legleiter Legleiter Science Consulting (CO) w/Paul Adams (presenter) Fort Hays State University (KS)

- *Benefits, Challenges, and Implementation of Service Learning in Physics*, Shannon Clardy, Henderson State University (AR)
- *Revitalizing College Physics at UALR*, Al Adams, University of Arkansas at Little Rock (AR)
- *Training Cellular Automata Using a Simple Conquer and Prevail Scheme*, Jared Gavin, University of Arkansas at Monticello (AR) w/Anabel de la Cruz and Juan Serna
- *The NWOSU ToPPS program: a content/pedagogy resource, building networks and certifying teachers*, Steven Maie, Northwestern Oklahoma State University (OK) w/Saeed Sarani Oklahoma State Regents for Higher Education (OK)
- *Demonstration of a Radio-controlled Tri-copter*, Brad Newby Butler Community College (KS) W/ Danny Mattern
- *Helping Students Learn to Use Constant Acceleration Formulas Properly*, Larry Weave, Johnson County Community College (KS)
- *A Survey of Kansas Physics Teachers - 10+ years later*, Paul Adam, Fort Hays State University (KS) W/Earl Legleiter, Legleiter Science Consulting (CO)
- *Use and Abuse of Equality in Solving Physics Problems*, Jorge Ballester, Emporia State University (KS)
- *Using an iPad in the physics classroom*, Danny Mattern, Butler Community College (KS)
- *Science and Engineering Institutes: A Community Outreach for Arkansas*, Shane Thompson, Arkansas School for Mathematics, Sciences, and the Arts (AR) W/Morgan Nall and June Thompson
- *Lunar Cycles and Earthquakes: Is there a Connection?*, Morgan Nall W/ Shane Thompson, Arkansas School for Mathematics, Sciences, and the Arts (AR)
- *A Top Ten List of Physics Misconceptions* Erica W/ Shane Thompson, Arkansas School for Mathematics, Sciences, and the Arts (AR)
- *Calibrating an Objective Assessment Instrument on a Small Class of Students*, Emanuela Ene, Oklahoma State University (OK)

The membership paused midway through the Saturday meeting to have lunch and hear from a special guest speaker Steven L. "Jake" Jacobs and his talk titled: "Wizard Tales: Mostly true stories from Discovery Channel, Mythbusters, and Mr. Wizard's World."

Jake is currently living in Wichita His undergraduate experience emphasized physics, math, and chemistry. His post-graduate education was in the fields of microbiology, planetary geology and science education.

Currently serving as a science consultant for National Geographic TV, Jake has served in a similar capacity for a wide variety of entities including Nickelodeon (Mr. Wizard's World), Mythbusters, Paramount Television (Algo's Factory), FOX Sports Network (Sports Science), ESPN

( Holiday Sports Spectacular), PBS, and others. He was Chief Scientist for the Discovery Channel and an on-air presenter for Science Live.

The AOK meeting was concluded after a Raffle and the organizational Business meeting in which new officers were elected for the upcoming year.

—Todd R. Leif, Section Representative

## Chicago Section

The Chicago Section met on Saturday, March 16, 2013 at Glenbard South High School in Lombard, Illinois. Our keynote speaker was Carol Keene Baker who gave us an update on the progress of NGSS and looked to the future of assessment. Other speakers included the following:

- “Physics of Banjos” by Joe Bella, Alex Gilman, Tom Sullivan, David Wieczorek, Loyola University Chicago
- “Modeling Modern Physics Phenomena and Applications Using G4Beamline” by Joe Kozminski and Elizabeth De Waard, Lewis University
- “Dimension and Probability” by Ted Erikson, R/E UnLtd.
- “Musical acoustics of stringed instruments” by T. Predey, R. Galbo, J. Kamberos, Z. Momin, and K. Pomian, Loyola University Chicago
- “Observing Electric Dipole and Quadrupole Effects from Scattered Laser Light” by Ernest Knight and Joe Kozminski, Lewis University
- “Resistivity of Conducting Paper” by Martha Lietz, Niles West High School

We had a business meeting during lunch, and this included the following: Paul Dolan presented the Secretary’s report and asked for nominations for the Fall Meeting, at which the elections take place. Debby Lojkutz presented the treasurers report and indicated we have plenty of funds to support visiting guest speakers. Kim Coble of Chicago State University presented a workshop entitled “Cosmology in the Classroom” after the business meeting was concluded.



We met again on Saturday, November 16, 2013 at Oakton Community College in Des Plaines, Illinois. Our keynote speaker was Gabe Spalding, who spoke to us about updating the advanced laboratory curriculum at his institution, including the goals and methods. He invited us all to join ALPhA to share methods and materials for the advanced lab. Other talks were given by the following individuals:

- Ted Erickson - “Activity, Probability and Panpsychism”
- Paul Dolan – “Fill the box, fill only the box...Ideas about non-standard quizzes.”
- Joe Kozminski – “Preliminary Recommendations from the Laboratory Subcommittee”
- Lyle Lichty – “Using ‘Praat’ for Acoustics Demonstrations and Labs”
- Rich DeCoster – “Hubble’s Variable: 90 years later”
- Katarzyna Pomian – “Physics of Stringed Instruments”
- Kara Beauchamp – “Teaching Introductory Electricity and Magnetism (non-calculus) with Sequenced Interactive Questioning”



At our lunch meeting we heard the secretary’s report, the treasurer’s report, and held our annual elections. The following slate of officers was elected.

President - Joe Kozminsky - Lewis University  
Vice President- Daniel Cahill - Grayslake Central High School  
Secretary - Paul Dolan - NEIU  
Treasurer - Debby Lojkutz - Joliet West High School  
Section Representative - Gordon Ramsey - Loyola University  
High School Representative - John Lewis - Glenbrook South High School  
Two-Year College Representative - Theodore Gotis - Oakton Community College  
Four Year College Representative - Gordon Ramsey - Loyola University

More information can be found at the section web site: <https://sites.google.com/site/chicagoaapt/home>

We plan to meet in the spring at Lake Forest College at a date to be determined in April. Fall meeting date and location remain to be determined.

—Gordon P. Ramsey, Section Representative

## Illinois Section

---

The Illinois Section of AAPT held two local meetings in 2013. Our spring meeting was hosted by the Western Illinois University in Macomb, IL and our fall meeting was hosted by Illinois State University in Normal, IL.

The theme of the spring meeting was “Setting New Standards in Physics Teaching”. Over 50 faculty, students, and guests participated in a panel discussion, invited and contributed talks, a lab tour, a dinner banquet, and other events. Invited talks were given by Dr. Esteban D. Araya (“Radio Astronomy: Observing the Invisible Universe”) and Dr. Kishor T. Kapale (“Super-Resolution: Quantum Tricks to Beat the Diffraction Limit”). The panel discussion was led by panel members Gwen Pollock, Jim Rabchuk, Jill Bucher, Gil Downey, and Pat Schlinder and focused on the Next Generation Science Standards. Full program details are available at [helios.augustana.edu/isaapt/s13/isaapt.html](http://helios.augustana.edu/isaapt/s13/isaapt.html).

Our fall meeting activities were were were attended by over 50 participants and centered around the theme “Physics and Astronomy Education”. Invited speakers included Dr. Rebecca Rosenblatt, Stacey Shrewsbury, Dr. Daniel Miller, Sanjay Rebello, Carl Wenning, Revecca Vieyra, and Dr. Robert Wagner. Two space themed events were organized for attendees – a telescope viewing/tour and a challenger learning center mission. Full program details are available at [www.isaapt.org/f12/isaapt.html](http://www.isaapt.org/f12/isaapt.html).

The Illinois section will meet twice in 2014. The spring meeting will be March 28-29 at Illinois Wesleyan University in Bloomington, IL and the fall meeting will be joint with the Iowa section at Bettendorf High School in Bettendorf, IA. More information about both of these meetings as well as other details about the Illinois Section can be found at [www.isaapt.org](http://www.isaapt.org).



Andrew Vikartofsky (right) winner of the 2012-13 Student Research Symposium with Brian Davies at the Spring Meeting.

—Zak A. Knott, Section Representative

## Iowa Section

---

The Iowa Section of AAPT held its annual fall meeting November 2, 2013 at Northeast Iowa Community College’s Regional Academy for Math and Science in Oelwein, IA with section President John Zwart of Dordt College officiating.

After a welcome by NICC President Dr. Liang Chee Wee, John Zwart made announcements and brought “News from National AAPT” which included announcing that next summer’s national meeting is in the neighboring state of Minnesota. In some sad news, he let members know that our 2010 section president, Cliff Chancey of the University of Northern Iowa, passed away unexpectedly.



Moving into contributed talks, Michael Farndale of Waldorf College showed how Vernier’s pressure sensor could be used to demonstrate Boyle’s law and pointed out several details to keep in mind to get good results. Sara Karbeling of Central Academy presented “It’s Your Lab – A New Focus on Inquiry in Upper-Level High School Physics Courses” in which she described how she is implementing inquiry based labs as required by Advanced

Placement and International Baccalaureate programs. Dale Stille of University of Iowa followed with “PVC Physics and Other Simple Demonstrations” by showing some 40+ demonstration and laboratory items that are built, entirely or in part, from PVC pipe.

After a brief break, Fred Behroozi of the University of Northern Iowa spoke on “New Configurations for a Hanging Chain Covered by a Soap Film: Measurements of Surface Tension from the Triangular Configuration.” While the shape of a chain supported by both ends forms a catenary, the addition of a soap film can change the shape to a concave, convex, or triangular configuration. The simpler geometry of the triangular shape allows for a straight-forward determination of the surface tension of the soap film.

Following a buffet lunch at Pizza Ranch, we returned to the RAMS Center for a pair of talks by Peter Brueken of Bettendorf High School. In “Doctopus and Goobric: Learning Management Systems for Googledocs” Peter described how he has addressed the challenges of his school’s implementation of both iPads and the use of Googledocs for assignments. In his second presentation, he introduced Vernier’s LabQuest2.

In an invited talk, Kayt Frisch of Dorndt College presented “Introductory Lab Techniques in Biomedical Research.” Kayt outlined her research project on commotio cordis, which is an often fatal injury caused by a sharp blow to the chest. Using her collaborator’s high speed video clips of balls fired into the chest of pigs, Kayt and first-year physics student Rebecca Megchelsen made use of Vernier’s LoggerPro video analysis capability to determine the impulse produced by the impact.

In “Not All Equations are Equal,” Nigel George of Upper Iowa University addressed the problem of students seeing all equations being equally important. He presented the framework which he uses in introductory algebra based physics to enable students to distinguish fundamental defining equations and key relations between physical quantities from the many other equations that are peculiar to particular problem solutions. Nathan Quarderer of host school NICC presented “Faculty Development Opportunities for TYC and HS Physics Faculty” which included the AAPT’s TYC workshop and many others. Ryan Dorland, of North Iowa Area Community College, spoke on his use of the Arduino Uno in “Lab Development Using an Inexpensive Open-source Electronics Prototyping Platform.” After this final presentation, we shared unknown and ‘stump the audience’ equipment gleaned from our store rooms. Dale Stille was able to identify virtually all of the devices.



Figure 2. Fred Behroozi of UNI shows how a soap film can make a chain hang in a triangle.

We ended our day with our business meeting. It was moved, supported, and carried that we accept an invitation to meet jointly with the Illinois Section next fall. Treasurer Jay Cutler reported that we currently have \$3755.61 in a CD, \$413 in our checking account, and \$476 in savings. It was moved, supported, and carried that \$500 be contributed to the scholarship fund being set up at UNI in memory of past section president Cliff Chancey. We elected Nathan Quarderer to be President-elect and Ryan Dorland to serve as Vice President for Two Year Colleges. Dale Stille and Craig Kletzing of U of I were re-elected secretaries, Michael Farndale of Waldorf College was re-elected to be Vice President for Four Year Colleges, and Larry Escalada was re-elected to serve on the Teacher’s Award Committee. After thanking our hosts, we adjourned for a tour of the RAMS Center.

—John Zwart, Section Representative

## Michigan Section

---

The Spring 2013 meeting of MIAAPT was held April 20 at Henry Ford Community College in Dearborn, MI. The meeting, chaired by our President Jim Gell (Plymouth HS) and coordinated by our 1st Vice President Scott Cochran (Kirtland CC) offered the opportunity for Dr. Michael LoPresto to showcase the newly renovated science building at HFCC. The meeting also gave attendees a unique glimpse into the Curiosity Rover mission to Mars. The plenary speaker for the meeting was Dr. Nilton O. Renno, scientist in the Atmospheric, Oceanic, and Space Sciences at the Univ. of Michigan-Ann Arbor. Dr. Renno presented an overview of the design and development of the rover Curiosity and discussed evidence for the presence of water on Mars.

During the morning session, there were a series of presentations on the teaching of topics in electromagnetism, including the surprising physics of refrigerator magnets (David Van Baak, Calvin College), geomagnetism (Wathiq Abdul-Razzaq West Virginia Univ.), and a queue-based analogy for current and resistance in DC circuits (Laurence

Tarini, Grand Valley State Univ.). Other talks by Rex Taibu and Chaiphath Plybour (both from Western Michigan Univ.) sparked lively discussion on teaching the concept of “weight” and assessment of student learning of force and motion. The meeting also included a roundtable discussion by Michael LoPresto on best practices for teaching astronomy.

At the business meeting in the afternoon, Les Latham (Port Huron North HS) was elected as the new 2nd Vice President. During the final breakout session, Brad Ambrose (Grand Valley State Univ.) facilitated a workshop on guided inquiry tutorials for teaching orbital mechanics. In addition, there was the opportunity for a guided tour by Dr. James Smith of HFCC’s renovated Science Building and new South Wing, as well as a show presented by Steve Murrell at HFCC’s Hammond Planetarium.

The Fall Meeting of MIAAPT is planned for Kirtland Community College in Roscommon, MI for October 12th, 2013.

—Mike Faleski, Section Representative

## North Carolina Section

The 18th Annual Spring Meeting of the North Carolina Section of the American Association of Physics Teachers was held April 19-20, 2013 at North Carolina State University in Raleigh, NC. Our local hosts were Bill Schmidt (Meredith College) and Michael Paestler of (NCSU).

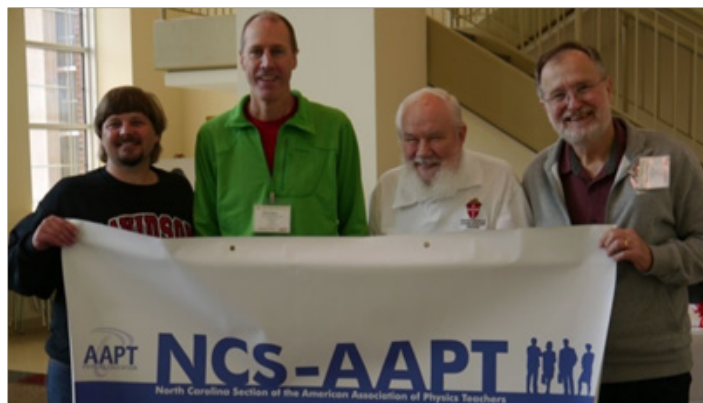
The meeting was organized as a tribute to John Hubisz. The theme could have been “the history or the NCS-AAPT” as John was a founding member of the Section and its Secretary/Treasurer for numerous years. This focus included a special panel discussion, “Science and Faith: Mutual Enrichment,” in John’s honor. In addition, many of the contributed talks fondly recalled John’s role in the North Carolina Section including a talk by Chuck Stone, who came from Colorado to honor John.



The Friday night banquet speaker was Dr. Bernard H. Cochran, Ordained Baptist Minister, Professor Emeritus, Department of Religion and Philosophy at Meredith College. His talk, “Issues in Science and Religion,” described the relationship between science and religion in regard to the origin of the universe. On Saturday morning, Dr. John Blondon (NCSU) gave an invited talk, “A New Spin on Supernova Physics,” which described his continuing research in computational astrophysics. There was also a student

research poster session with 13 posters and also three afternoon workshops.

Luis Guadalupe of UNC Pembroke received the Best Undergraduate Paper Award for the poster, “Using EJS to Simulate a Frequency-Modulated Mechanically Driven Oscillator.” Eric Raymer of NCSU received the Best Graduate Student Award for the poster, “Testing the Stability of Three-Dimensional Hoyle-Lyttleton Accretion.” Austin Griffin of UNC Pembroke received the Best Pedagogical Paper Award for the poster, “Obtaining Fourier Coefficients of Selected Waveforms Using a PC Soundcard.”



The four John L. Hubisz Award winners (Mario Belloni, Chuck Stone, John Hubisz, and Wolfgang Christian) were also in attendance at the meeting. The John L. Hubisz Award honors Outstanding Service to the Section.

The North Carolina Section Business Meeting was held Saturday afternoon.



The 18th Annual Fall Meeting of the North Carolina Section of the American Association of Physics Teachers was held jointly with the South Atlantic Coast Section of AAPT and Zone 5 of SPS on October 25-26, 2013 at Furman University in Greenville, SC. Our local host was David Moffett of Furman University.

On Friday afternoon there was a Planetarium Show, followed by a banquet with the keynote speaker Dr. Bryan Baker from NIST. His talk, “Biomaterials in Tissue Engineering: Shape Matters,” described his biophysics work on human bone marrow stromal cells. On Saturday morning, there were 30 contributed talks and 17 posters presented. In the afternoon there were 3 workshops. There was also a separate SPS program which focused on industrial physics and careers post-graduation.

Helen Meskhidze of Elon University received the Best Undergraduate Paper Award for the poster “Modeling the

Composition of Gamma-Ray Burst Jet Cocoons.” John Aiken of Georgia State University received the Best Graduate Student Paper for the presentation “Computational Modeling Activities for High School.” James Perkins and Judith Beck of UNC Asheville received the Best Pedagogical Paper for the presentation “Finding Physics: Recognizing and Exploring Physics outside the Classroom.”

The NC Section also worked with the National AAPT and NSTA to provide “Physics Day” at the Charlotte Regional NSTA Meeting on November 8, 2013. There were 6 presentations throughout the day:

- “Modeling What You See Using Video Analysis” by Wolfgang Christian (Davidson College)
- “PhysicsQuest: Spectra’s Turbulent Times” by Rebecca Thompson (American Physical Society)
- “Supernova Remnants, Cosmic Rays, and Cosmology” by Stephen Reynolds (North Carolina State University)
- “Astronomy Make-and-Take” by Mario Belloni (Davidson College)
- “Using Video and Animation in Physics Instruction” by Loren M. Winters (North Carolina School of Science and Math)
- “Physics from the Junk Drawer” by Scott Ragan (North Carolina State University)

As part of the day, Wolfgang Christian organized a video conference with Beth Cunningham for a focus group of 6 high school teachers. The goal of this focus group was to hear from high school teachers that were not AAPT members and determine what AAPT can do to encourage more high school members.

Our Spring 2014 Meeting is scheduled for April 10-11 at Appalachian State University in Boone, NC.

—Mario Beloni, Section Representative

## Ohio Section

The Fall 2013 Meeting of the Ohio Section of the American Association of Physics Teachers was held at the Lorain County Community College in Elyria, OH on Saturday October 19th. Dr. Steve Majoros was the host of the meeting.

There were two plenary speakers. Steven Hauck (Department of Earth, Environment, and Planetary Science at Case Western Reserve University) spoke on the Messenger Mission to Mercury. Robert Ferguson (Science Education at Cleveland State University) talked about Project-based versus Problem-based learning as they relate to Next Generation Science Standards.

The winner of the “How I Do It” session was Michael Lerner (Beachwood High School) with his presentation of how he uses the Mulvey Method to teach proportional reasoning. The business meeting consisted of announcements, section representative’s report, and the treasurer’s report.

Following box lunches, attendees were able to participate

in two workshops. Steve Majoros (Lorain County Community College) conducted a workshop on various data-collection techniques using Vernier sensors and Logger Pro software. Steve Hubbard (also of LCCC) gave a tour of the brand new fabrication laboratory. Attendees watched a demonstration and got to fabricate a simple capacitor.



A simple capacitor made in the Fabrication Laboratory



Listening to the topic on the Mission to Mercury.



Steve Majoros explaining how he uses Vernier equipment for data collection in his labs.

The meeting concluded with the usual “give-a-way” with donations provided by AAPT, Vernier and Education Innovations as well as donations from Section members.

—Myra West, Section Representative

## Ontario Section

---

The Ontario Section of AAPT (Ontario Association of Physics Teachers) enjoyed another very busy year. The current report features 2013 events and activities.

OAPT Thirty Fifth Annual conference titled “Physics Education Research in Action!” took place May 2-4, 2013. It was hosted by the University of Ontario Institute of Technology (UOIT) in Oshawa, Ontario. As always, the conference opened with traditional barbeque followed by the conference tours and social activities. The conference featured a wide range of workshops organized into five workshop sessions. Each session contained several concurrent workshops. Six different workshops were dedicated to PER-informed pedagogies. The conference program and more details about the workshops offered can be found at <http://www.oapt.ca/conference/2013/program.html>. The reviews of the selected conference sessions can be found in July 2013 Newsletter at [http://www.oapt.ca/newsletter/2013\\_07.pdf](http://www.oapt.ca/newsletter/2013_07.pdf).

Ontario Section maintains very vibrant website <http://www.oapt.ca> that was expanded and revitalized in 2012.

Various teaching resources (including but not limited to the conference materials downloads) are posted at <http://www.oapt.ca/resources/index.html>. For example, past OAPT Contest questions collected by topic and ready to use in the classrooms can be found at <http://www.oapt.ca/resources/contestQB.html>, while the page about Concept Questions for Peer Instructions can be found at <http://www.oapt.ca/resources/conceptquestions.html>. Also, all of the Demonstration Corner contributions collected over 25 years are available at <http://www.oapt.ca/resources/democorner.html>.

The list of recent and upcoming events in which the OAPT members are involved can be found <http://www.oapt.ca/events/index.html>.

Our Newsletter is published quarterly and can be found at <http://www.oapt.ca/newsletter/index.html>. Its regular features include Demonstration Corner, Physics Education Research, and High School Physics sections. The OAPT web site now features OAPT Newsletters dating back to 1979. The most recent newsletter was published in October 2013. It can be accessed on-line at [http://www.oapt.ca/newsletter/2013\\_10.pdf](http://www.oapt.ca/newsletter/2013_10.pdf). July 2013 Newsletter at [http://www.oapt.ca/newsletter/2013\\_07.pdf](http://www.oapt.ca/newsletter/2013_07.pdf) features President’s overview of recent developments.

We are happy to announce that our Past President Dave Doucette is awarded the 2013 Canadian Association of Physics Teachers (CAP) Award for Excellence in Teaching High School/CEGEP Physics (Ontario) for his tireless promotion of Physics Education Research, whose efforts have transformed the practices of teachers across Ontario. Dave is not just a great physics teacher - he is a great teacher of physics teachers. He has given hundreds of workshops and he has provided countless hours of individual mentor-

ing. He has led the resurgence of the Ontario Association of Physics Teachers - doubling conference numbers and developing a summer camp for teachers. His enthusiasm is inspirational, his knowledge and his generosity greatly appreciated. Please join us in congratulating Mr. Doucette, winner of the 2013 CAP Award for Excellence in Teaching High School/CEGEP Physics (Ontario).



Our next (36rd!) annual conference will take place on May 8-10, 2014 and will be hosted by the Department of Electrical and Computer Engineering, the University of Toronto. This conference will focus on STEM education. Building on success of previous annual conferences, our 36th annual conference once again will feature an array of exciting presentations and hands-on, activity-based workshops. For full conference program please visit <http://www.oapt.ca/conference/2014/index.html>.

We are looking forward to refine and further expand our activities by building upon our successes and strengths in 2015 and beyond.

—Tetyana Anitmirova, Section Representative

---

## Southern California Section

On November 9, over fifty members of the Southern California Section gathered at LaSalle High School (Pasadena, CA) for a day full of informative presentations and lively discussions. SCAAPT thanks Chija Bauer, who hosted the meeting and Bradley “Peanut” McCoy, who served as Program Chair of the meeting. The meeting was called to order by SCAAPT President James Lincoln.

Lee Loveridge and Travis Orloff led a workshop where



they shared classroom activities that they have developed at Pierce College. The workshop participants were able to try out the highly constructivist, learning cycle driven curriculum. Ben Frederiksen from Fluke demonstrated the latest in infrared imaging technology and discussed possible classroom applications. Because of the continuous advance of technology, the cost of such imagers is rapidly decreasing. Bob Trout, who works as a Solar System Ambassador at the Jet Propulsion Laboratory, shared some of his techniques and materials for engaging students (and teachers) in discussions about space exploration.

Several other SCAAPT members also gave engaging contributed presentations:

- Dante Sblendorio and Jeff Phillips, LMU- Identifying the factors of problem complexity
- Kevin Osorno and Jeff Phillips, LMU- Examination of Students' Self-Monitoring in Problem Solving
- James Keipp, UCLA Center X, AP Readiness - Ensuring Equity & Access to All Students
- Cliff Gerstman, Middle College High- The FORCAST for Infrared Astronomy
- David McKay, CSULB- Misconceptions of well-known E&M YouTube lectures
- Lee Loveridge, Pierce College- Using a flipped classroom
- Chija Bauer, La Salle HS- Professional development through the twitter blog-o-sphere
- Craig Sipes, Washington Prep HS- Sustainable Physics
- Paul Bruno, Watts Learning Center Charter Middle School- Identifying and Overcoming the Challenges of the NGSS
- Homeyra Sadaghiani, Cal Poly Pomona- Utilizing Learning Assistant (LA) program to increase number and quality of high school physics teachers in CA

The ever-popular Show 'n' Tell featured demonstrations by James Lincoln (Tarbut V'Torah HS), Gary Reynolds (Santa Ana HS), Tim Heumier (APU). The meeting ended with the World Famous "Order of Magnitude Contest." This meeting's question was: What fraction of a house's mass is the paint on the walls?

SCAAPT thanks its corporate sponsors –Arbor Scientific, Fluke, PASCO, and PhysicsVideos.net– for their support and donation of door prizes.

The Southern California Section will hold its Spring Meeting on May 3rd at Irvine Valley College. Please bookmark the SCAAPT homepage <<http://www.scaapt.org/>> and check for more information in the Spring.

New Physics Teacher Workshop (NPTW)

SCAAPT has been organizing workshops for new physics teachers in Southern California for the past two years. Over that time period nearly 200 new physics teachers have attended at least one of the daylong workshops, with many teachers attending two or three workshops as each focuses

on different topics within introductory physics. The entire day is spent working on physics content, demonstrations and laboratory exercises that the new physics teachers most likely will find useful in the coming months. USC hosted the early fall workshop, which focused on mechanics and thermodynamics. The most recent Workshop was held at "Trash for Teaching," a non-profit located in Gardena California that rescues manufacturing overruns, discards and castoffs, originally headed for landfill, and re-imagine these items for use in the classroom.

Video Contest

SCAAPT is proud to present its second annual Physics Student Video Contest. The contest is open to all Southern California high school, community college and undergraduate students. The winning entry will receive a \$500 grand prize. (That student's teacher will receive a \$50 award.) With this annual content, SCAAPT is hoping to increase its visibility among local teachers.

Restructuring of finances

Thanks to the herculean efforts of James Lincoln and Nuria Rodriguez, SCAAPT has finally become a federally-recognized 501(c)(3) charity which can now accept tax-deductible donations (EIN 46-1088941). SCAAPT believes that this will allow the section, and programs such as NPTW, to continue with a strong financial footing.

—Jeff Phillips, Section Representative

## Southern Nevada Section

---

During the last half of 2013, the Southern Nevada section of the AAPT (SNAAPT) met on two Saturdays, on August 24 and October 19, 2013. Both meetings were held in the physics building on the campus of the University of Nevada, Las Vegas (UNLV). Both meetings were planned to meet the needs of high school physics teachers. Attendance was much higher than usual, mostly by high school physics teachers.

High school physics teachers are expected to meet a list of specific student learning objectives during the fall semester. All the materials presented at the meetings were tied to the list of objectives, so the high school teachers know that they are meeting the official objectives. Teaching materials were handed out to participants, mostly on jump drives and DVDs.

Presentations were made by two experienced high school physics teachers (James Barker and the recently retired Mitch Johnson) and by a UNLV professor, John Farley.

Mitch Johnson uses the Socratic method, where the teacher asks questions of the students, so the role of the instructor is as a "guide on the side", rather than the "sage on the stage". On August 24, Mitch presented Modeling Physics worksheets Unit 8, showed the progression of the

worksheets, and pointed out many common student misconceptions about circular motion and ways to avoid them. On October 19, Mitch presented information on the newly created web site and discussion board for all of the members to use. It is anticipated that local physics teachers will use the site to collaborate.

James Barker's teaching combines: lectures, demonstrations, modeling of problem solving methods, group guided practice of problem solving, competitive lab activities, and discovery of laws by data collection and graphing. Students are the center of instruction during more than 50% of the class time, including group presentation of problems solved during group practice.

John Farley uses Peer Instruction (Eric Mazur) Farley provided some three dozen ConcepTests for the first quarter of the school year. He also provided a sample of "paper clickers" (small pieces of colored paper) that students can use to vote anonymously to answer the ConcepTests.

—John Farley, Section Representative

### Southern Ohio Section

---

The Southern Ohio Section of AAPT met on Saturday, October 5, 2013 at the University of Cincinnati. We met in conjunction with the Ohio Region Section of the American Physical Society. Jim Sullivan coordinated and hosted the AAPT portion of the day, and approximately 30 members and guests registered through AAPT. We had invited presentations from Diandra Leslie-Pelecky (West Virginia University) and Bob Hilborn (Assistant Executive Officer of AAPT). Diandra described her experiences and findings analyzing the world of NASCAR in *The Science of Speed: Why Driving Really Fast is Harder than You Think*. Bob gave us a national perspective on changes in science standards, advanced placement exams, and the MCAT in *Next Generation Science Standards and the Revised MCAT: The New Face of Science Education*. Further, Kathy Koenig (University of Cincinnati) and John Rowe (the teacher-in-residence) announced the designation of the University of Cincinnati as a new PhysTEC site and led a short conversation about how those of us in the area can work together to support these efforts.

We enjoyed the following contributed papers: *A Three-fold Approach to Changing Teaching in Middle School* (Gordon Aubrecht, The Ohio State University – Marion); *Pitch Depends on More Than Length* (Lenore Horner, The Seven Hills School); *Philosophy of Science in an Introductory Laboratory* (James Simmons, Shawnee State University); *Rediscovering Newton's Second Law With The "Triple Crown" Experiment, Even When Only Two Parts Are Available* (Jean Oostens, Science Teachers Alliance – South Central Kentucky). We also learned about performance

tasks in a "How I Do It" presentation from Gregory Braun of Xavier University.

The next meeting of the section will be Saturday, March 9, 2014 at Bishop Hartley High School in Columbus. Ann Lane Hawk will host, and Aaron Titus (High Point University) will be a featured presenter.

—Kathy Harper, Section Representative

### Wisconsin Section

---

The Fall 2013 meeting of the Wisconsin Association of Physics Teachers was held on October 25-26, 2013 at UW-Eau Claire in Eau Claire, Wisconsin.

The banquet speaker was Professor Chris Chyba from Princeton University.

He presented a talk on: "Oceans in the Solar System."

Papers presented:

- Low-Cost Alternative Energy Lab and Demonstration Equipment, Roger Hanke, NorthCentral Technical College
- An Examination and Application of Proton Radiotherapy Ascribed to a Computational Modeling and Analysis of a Four-Trimmed Dynamic Collimation System for Penumbra Reduction in Spot-Scanning Delivery, Blake Smith, University of Wisconsin-Eau Claire
- Relativity on Rotated Graph Paper, Rob Salgado, UW-La Crosse
- Using open datasets and simulations in laboratories, Jim Crumley, College of St. Benedict / St. John's University
- Getting to the point when showing what you have learned. Gary Baier, Green Bay East High School
- Accelerometers, Microcontrollers, and Water Rockets, George Stecher, University of Wisconsin-Eau Claire
- A sunspot tracking project for introductory astronomy, Carey Woodward, UW--Fond du Lac
- Using Standards Based Grading, Brad Wsocki, Bloomer High School
- Should (and Can) We Teach Forces First?, Andrew Pawl, UW-Platteville
- Bending and Busting, Alan Scott, University of Wisconsin-Stout
- Internet Coaches for Problem-solving in introductory physics: Usage, Usability and Design, Evan Frodermann, University of Minnesota
- Another Look at Surprising Facts about Earth's Past and Current Population, Jim Mallmann, Milwaukee School of Engineering
- Studying the Sun with Neutrons: Research Opportunities for Two Year College Students, Jim Madsen, UW-River Falls
- IceCube: Engaging Undergraduates in Neutrino As-

trophysics Research, Suruj Seunarine, University of Wisconsin

- What Makes a Photocathode Good? , Thomas Nevins, University of Wisconsin - Eau Claire and Argonne National Laboratory
- A BFY Lab Experiment - Using an LED as a Single Photon Avalanche Diode , Lowell McCann, UW-River Falls
- Using Robots to Teach Motion, Brad Wysocki, Bloomer High School

#### Posters:

- Preparing Wisconsin teacher with “A LOT of Science,” Jennifer Docktor, University of Wisconsin - La Crosse
- Eye movements while interpreting graphical representations of motion, Jennifer Docktor, University of Wisconsin - La Crosse
- Imaging Dynamic Solar Activity in Hydrogen-Alpha Light, Mandy Neumann, University of Wisconsin-Eau Claire
- Laminar Fluid Flow in Non-Circular Pipes, Michael Yohn, University of Wisconsin-Eau Claire
- Computer Modeling of Satellite Debris Following Breakup or Collision, Thomas Nevins, University of Wisconsin - Eau Claire
- Computational Modeling of the Chaos/Stability Bifurcations of an Inverted Kapitza Pendulum, Timothy McAuliffe and David Tamres, UW-Stevens Point

#### Workshops:

- Excel Physics!, David Tamres, University of Wisconsin - Stevens Point
- Direct Measurement Video Workshop, Peter Bohacek Henry Sibley High School and Matt Vonk UW - River Falls
- Interactive, Simulator-Based Online Resources for Astronomy Classes, Adriana Durbala, UW - Stevens Point
- Renewable Energy Workshop , Kim Pierson, UW - Eau Claire
- The Physics of Soap Films, Swapnil Tripathi, University of Wisconsin Colleges-Washington County

#### Current officers of the Wisconsin Section of AAPT:

President Matt Evans, UW-Eau Claire (2013-2014)  
Vice-President Melissa Vigil, Marquette University (2013-2014)  
Past President: Phil Young, UW-Platteville (2013-2014)  
Past-Past-President: Brad Hinaus, UW-Stevens Point (2013-2014)  
Secretary-Treasurer: Erik Hendrickson, UW-Eau Claire (2013-2016)  
Two-Year College Representative: Carey Woodward, UW-Fond du lac (2012-2014)  
High School Representative: Gary Baier, Green Bay East High School (2012-2014)  
Section Representative: A. James Mallmann, Milwaukee School of Engineering (2012–2014)

—James Mallmann, Section Representative

To list your section meeting in the AAPT Calendar of Events, e-mail the information to [mgardner@aapt.org](mailto:mgardner@aapt.org).

### American Association of Physics Teachers

One Physics Ellipse • College Park, MD 20740

ph. 301.209.3333 • fax 301.209.0845 • web [aapt.org](http://aapt.org)