

## Chicago Section

The spring meeting of the Chicago section was held on Saturday, April 11, 2015 at Glenbrook South HS in Glenview, IL. The morning session consisted of a diversity of talks, while the lunch and business meeting was held afterwards. The program consisted of the following:

Speaker	Title
Ted Erikson	Dimensionless Dualities
Lars Nelson	How to organize an evening star party that awakens student curiosity
John Lewis	The physics of bounce juggling
Symeon Solecki (student)	Room acoustics as a study of waves
Connie Wells	Inquiry based Labs in the High School classroom (Plenary)
Kathy Fritsch	Online labs
Mark Partain	Towards a more quantal description of central nuclear collisions
Matt Lowry	Skepticism in the classroom

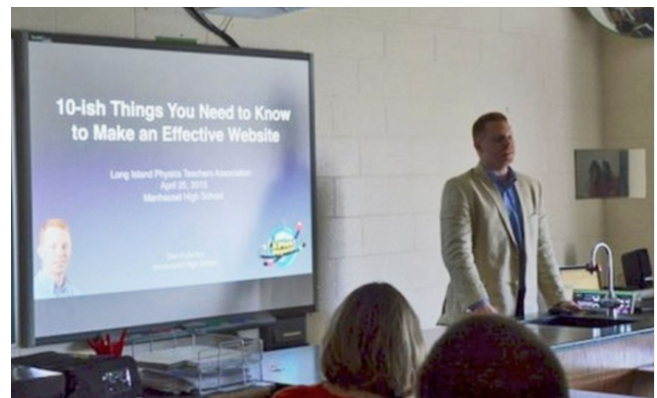
Lunch and a business meeting followed the talks, where we discussed how to interact more with local members and national AAPT. Discussion will be continued by e-mail exchanges.

—Gordon P Ramsey, Section Representative

## Long Island

This year's activities have paralleled previous years' offerings. Our conferences, competitions, and social gatherings are geared to the high school teachers in Nassau and Suffolk counties. Our members seem to like the abbreviated Saturday morning conferences. Our Fall conference took place at SUNY Stony Brook Physics building on November 8, where twenty five of our members participated in a smorgasbord of demonstrations broken down by topics and presented

by some of our local Master Teachers and LIPTA board members. Terese Keogh, our newspaper editor, used her KINEX roller coaster to head up the Work and Energy table and Rich Gearns of Sachem High School showed how students could be turned on to waves and light with a laser refraction set-up. A second session was presented by LIPTA First Vice President Bill Leacock to help teachers of the new AP Physics rotational motion topic use demonstrations in their classrooms. Breakfast at 8:30 and lunch were served to allow for sharing time and the conference was over by 1:30. Our Spring Conference followed a similar format with invited speaker Dan Fullerton from Irondequoit High School in Rochester, New York and adjunct professor at Rochester Institute of Technology offering a session on tips for creating a website. Thirty five participants at Manhasset High School then produced a make-and-take session demo that allowed a ball to fall "faster than g".



Physics Day on October 21 at our local amusement park, Adventureland in Farmingdale, New York, permitted 700 local students to get a thrilling taste of the physics that they would be learning. Rich Yngstrom, Committee Chair, organized this event. The Physics Olympics took place on March 19 at Farmingdale State College Physics Department with 14 teams competing from across Long Island. Breakfast and a pizza lunch sustained participants through five events like Physics Bowl and Pendulum

of Doom. The winning team was from Wheatley High School led by teacher Adam Plana. Our events coordinator, Dr. Gillian Winters from Smithtown High Schools saw that everything ran smoothly.

The AP Physics review meeting at BOCES in Deer Park on May 20 took a slightly different path this year because the AP Physics 1 and AP Physics 2 exams were discussed in detail, while the AP Physics C was not dissected. Bill Leacock from Mephah High School and Dr. Gillian Winters, LIPTA second Vice President presented the exam contents along with our at large, retired board member Harry Stuckey. Our last event of the year, the LIPTA BBQ was hosted by Bill Leacock on June 30. Discussion about the NYS Physics Regents and the year's triumphs and woes were aired as fellow educators relaxed around an outdoor lunch prepared by Bill and our President, Ed McDaniels.

We continue to keep our members informed via our tri-annual newsletter thanks to Terese Keogh of Manhasset High School. Our monthly executive board breakfast meeting have fostered friendly competition for the best gourmet meal as events are organized and executed for the year. Thanks to all of our board members for their time and dedication to keeping physics teaching an interesting and rewarding profession. We are especially proud of Dr. Gillian Winters who is this year's recipient of the Paul W. Zitzewitz Award for Excellence in K-12 Physics Teaching who will speak at the Summer Meeting at College Park, Maryland as she receives her prize. Congratulations, Gillian!

—*Tania Entwistle, Section Representative*

## **Idaho Utah Section**

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The annual meeting of the IdahoUtah section of the American Association of Physics Teachers was held March 13-14 at Snow College in Ephraim, Utah. The everpopular demonstration show was held Friday night and was attended by over 200 people. A short video compilation (thanks to Snow College!) is available here: [https://snow.mediaspace.kaltura.com/media/aapt\\_event/0\\_9sg0w43a/13823862](https://snow.mediaspace.kaltura.com/media/aapt_event/0_9sg0w43a/13823862)

Saturday held a full season of talks and activities,

highlighted by a report from the Governor of Utah's advisor for science education, Tami Pyfer. About 50 people participated in the conference, which was organized by Larry Smith, the current vicepresident of the section. A copy of the program is attached below.

Of particular interest was the business meeting, in which Brian Pyper was reelected as Section Representative and Adam Beehler was elected as presidentelect in absentia and in anticipation of his organizing the section meeting in two years at the University of Utah. This means the current spate of officers is: Katie Devine (CofI) Past President, Larry Smith (Snow College) President, Steve Shropshire (ISU) Vice President, Adam Beehler (UofU) PresidentElect and Treasurer, and Brian Pyper (BYUI) Section Representative. The section meeting will be held in Pocatello next year hosted by Steve Shropshire.

Rondo Jefferies from Weber State graciously sent me a note listing the history of the section meetings going back to 1983 when the section was founded. I've posted it at the section website at [idahoutah.aaptsections.org](http://idahoutah.aaptsections.org).

—*Brian Pyper, Section Representative*

## **Michigan Section**

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The Spring 2015 meeting of MIAAPT took place April 10-11, 2015 and was hosted by Michigan State University in Lansing, Michigan. Approximately 40 attendees included instructors from high schools, two-year colleges, and four-year colleges/universities, as well as several students and retired teachers. The meeting was chaired by our President, Prof. Alan Grafe (University of Michigan-Flint) and coordinated by our 1st Vice President Les Latham (Port Huron Northern High School).

**Public lecture.** The meeting opened with a public talk on the evening of Friday, April 10, delivered by Prof. Brian O'Shea, Associate Professor of Physics at Michigan State University (MSU). An expert on galaxy formation and evolution, Prof. O'Shea gave an informative and entertaining talk, "Disaster from the Skies!", on what science fiction has had to say about purported threats to Earth (asteroids, rogue black holes, etc.) and what science really has to say about such objects.

## Contributed presentations and MSU Cyclotron

**Tour.** The following morning, welcoming remarks by Prof. Grafe, Prof. Danny Caballero (MSU) and MSU Physics Chair Prof. Phil Duxbury kicked off a full conference day. The morning schedule was dedicated to numerous contributed presentations. For example, Mike Faleski (Delta College) discussed the tendency of introductory students (and some faculty colleagues!) to favor complicated algebraic solutions to physics problems rather than search for more elegant graphical or geometrical solutions. Taoufik Nadji (Interlochen Arts Academy) shared his experiences implementing—an innovative student-centered approach first devised for teaching kinematics and mechanics at the high school level—to instruction in geometrical optics. Anna Turnbull, a graduate student in Physics Education Research at MSU, discussed evidence of difficulties encountered by upper division classical mechanics students when solving problems that require decomposition of vectors. Immediately before lunch attendees were treated to a tour of the MSU Cyclotron facilities and an update on construction of the Facility for Rare Isotope Beams.

**Featured speaker.** After lunch, Prof. Vashti Sawtelle, member of the MSU Physics Education Research Lab, delivered our plenary address. In her research Prof. Sawtelle studies how learning environments support (or inhibit) students from diverse backgrounds. In her talk, “Why Aren’t There More Women in Science?”, Prof. Sawtelle discussed the current status of women in physics and factors that have contributed to the persistent underrepresentation of women in physics. She also shared several concrete examples of teaching practices and behaviors that instructors at all levels can employ in order to make their courses more equitable for all students.

**Workshops.** Following a business meeting were two engaging workshops. Dr. Michael LoPresto (Henry Ford Community College) presented a workshop titled “Doing Scientific Investigations in Introductory Astronomy—Is it Possible?” The workshop invited teachers to share their past successes and challenges in developing critical thinking skills in their students while teaching astronomy. The other workshop was the latest in a series of popular “make and take” workshops co-led by James Gell (Plymouth High School) and Steve Dickie (Divine Child High School).

**New officer election.** As part of the business meeting, the attendees thanked Prof. Alan Grafe for his service as President of MIAAPT. He will be succeeded by the previous 1st Vice President, Les Latham, who himself was succeeded by the previous 2nd Vice President, David Shane (Lansing Community College). Elected as the section’s new 2nd Vice President was Prof. Laurence Tarini (U. Michigan-Flint).

**Next meeting.** The next MIAAPT meeting is scheduled to take place on Saturday, October 3, 2015, at Interlochen Arts Academy, in Interlochen, MI. Dr. Holly Gilbert, Chief of the Solar Physics Laboratory at NASA, will be our featured speaker.

—Bradley S. Ambrose , Section Representative

## North Dakota Section

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The North Dakota section of the American Association of Physics Teachers met on 21 March 2015 in Bismarck, ND, on the Century High School (CHS) campus. The meeting was held in conjunction with the North Dakota Science Teachers Association’s annual meeting and the NDCTM (North Dakota Council of Teachers of Mathematics).

The physics share a thon preceded the AAPT business meeting. The Share-a-thon has become a fixture of the NDSTA meeting and is quite a crowd-puller. The business meeting opened with confirmation of minutes of the last meeting at Valley City State University (VCSU) and closed with the election of officers. We now have a new Vice President: Mike Walz and a new secretary Kathryn Bohle.

The business meeting was preceded by discussion and sharing of demonstrations and teaching ideas. We will explore the possibility of having a Physics share-a-thon during the school year at Bismarck State College and other High Schools. Our next Business meeting will very likely be in Grand Forks at about the same time next year.



Duane asks a participant to blow on some physics contraption Looking on is Rick Henry: treasurer and Kathy Bohle our new secretary



Larry Cook demonstrates with a heavy duty Horse shoe magnet: A Magnetic Force exerted on a current carrying wire.

—Anthony Musumba Mwene, Section Representative

## South Dakota Section

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Meeting Called to order at 3:45 p.m. by President Molly TenBroek.

Members present were: Joel Rauber, James Stearns, Deirdre Peck, Larry Browning, Molly TenBroek, Heather Brown and Peggy Norris.

No Secretary's Report.

Treasurer's Report: Larry reported that we have \$783.45 in our account. Paul Kuhlman donated \$50 towards

the payout for the photo contest. Molly T. donated \$20 so we won't have to take any money out of our account.

The group judged the photos that were submitted for the photo contest.

1st place: Pinhole Camera—Justice Brim

2nd place: Waves—Rikka Skavbo

3rd place: Black Hills—McKenzie Patton

New Business:

Summer Opportunities: Larry's summer workshops are not finalized yet. The request for proposals is due Feb.13.

Peggy Norris informed us that South Dakota has been chosen to hold host a regional Conference for Undergraduate Women in Physics. It is a 2.5 day conference and is at 9 locations around the country. It will be over Martin Luther King day next year. They

are planning a high school girls day and are hoping to get many enthusiastic high school girls from SD and surrounding states who are interested in physics. She will send out more information as things become finalized.

Larry talked about a 34 year grant for \$10,000/year for junior and senior STEM majors at SDSU.

Joel, our state AAPT representative, talked about the discussion at the conference about having regional reps instead of individual state reps. Most members wanted to keep things the same.

All officers were reelected to their current positions. Joel made a motion to adjourn and Larry seconded the motion.

Meeting adjourned.

Molly TenBroek, reporter.

—Joel D. Rauber, Section Representative

## Southern California Section

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On Saturday, April 25, 2015, over fifty members of the Southern California Section of AAPT gathered at University of California at Los Angeles for an exciting day filled with new physics and helpful advice for the classroom. SCAAPT thanks Shanna Shaked 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.

The meeting included many fascinating invited presentations:

Troy Carter, UCLA, gave an overview of the challenges associated with harnessing nuclear fusion as a terrestrial power source and the progress that has been made in research in this area.

Walter Gekelman, UCLA, and some of the high school students that work in his lab presented the theory and experimental results from UCLA's Large Plasma Device. (LAPTAG is a university-high school alliance outreach program, which has been in existence for over 20 years.)

James Larkin, UCLA, described his group's use of infrared cameras and spectrographs, and how they aid our understanding of planetary formation. Gemini Planet Imager is conducting a survey around nearby

young stars looking for planetary systems like our own.

Marty Simon, UCLA, discussed the theoretical explanations for why magnetic levitation is impossible as well as outlining five ways to perform magnetic levitations, which were also demonstrated.

James Lincoln, Tarbut V'Torah HS, presented video and experimental techniques that make infrared light as real as visible light. The demos help to show the wave nature of IR, the differences between IR wavelengths, various methods of "observing" IR and ways of countering some of the many misconceptions related to IR.

Jocelyn Holland, UC Santa Barbara, talked about Johann Wilhelm Ritter who was a brilliant experimentalist that worked in the then rapidly developing fields of electricity, galvanism, and chemistry. Among his many accomplishments- he constructed the first dry cell battery and discovered the ultraviolet part of the light spectrum.

Antonio Nassar, UCLA and Harvard-Westlake HS, strove to answer a challenge posed by Bell on the lack of clarity in regards to the dividing line between the quantum and classical regimes in a measurement problem.

Several other SCAAPT members also gave engaging contributed presentations:

- John Altounji, LA Valley College "NGSS/Common Core – A Rebuttal"
- Shanna Shaked, UCLA "Low-hanging Fruit for Active Learning in Large Lectures"
- Jasper Kok and Shanna Shaked UCLA "Development of high school modules based on atmospheric physics research"

At the annual section business meeting, the members passed several amendments to the Constitution and By-laws that are intended to clarify the definition of a member.

The ever-popular Show 'n' Tell featured demonstrations by Bernie Cleyet (surprising effects of convection currents in water), John Altounji (variation of the Brachistochrone) and James Lincoln (visualization of charging and discharging of capacitors).

At the end of the eventful day, members took a tour of the plasma lab at UCLA. Dr. Gekelman gave them the grand tour of the Large Area Plasma Device, The Toroidal Plasma Device, the High School Plasma Lab and some of the 3D images of flux ropes in a plasma.

SCAAPT thanks its corporate sponsors –Arbor Scientific, UCLA and PASCO– for their support and donation of door prizes and food.

The Southern California Section will hold its next meeting in the fall. Please bookmark the SCAAPT homepage <<http://www.scaapt.org/>> and check for more information in the summer.

### **New Physics Teacher Workshop (NPTW)**

The New Physics Teacher Workshop program continues to go on strong, thanks to the Brown Foundation and other anonymous donations. So far we have reached over 300 new teachers in Southern California. This year we made an effort to begin our expansion to the South Counties, especially the San Diego area. In this effort, we had an April 18 Meeting at CSU San Marcos. This meeting was well-attended and there we met many new teachers that we had previously not reached. We were supported by Greg Severn of SDU and Ed Price of CSUSM at this meeting.

### **Updates on SCAAPT technology**

Over the past two years, SCAAPT has studied its current technology for communicating with members and maintaining records. A clear need to modernize and integrate these aspects was evident. Recently, the Jeff Phillips and the other officers completed the transition to a WordPress-based website and a MailChimp-based membership directory. By integrating these two platforms, it is now possible to target specific segments of the membership with emails as well as allow members to post announcements to the website, which in turn are emailed out to all members. While some work was required to do the initial configuration, little to no coding was necessary as everything was done with off-the-shelf tools. SCAAPT would like to thank John Mallinckrodt and Cal Poly Pomona for the many years of technology support. Those interested in learning more of the technological details and background, are encouraged to visit <<http://scaapt.org/technology>>.

—Jeff Phillips, Section Representative

## **Southern Ohio Section**

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Vicki Quinter and Anna High School hosted the spring meeting of the Southern Ohio Section on Saturday April 18. Many thanks to them for their support of a flawless meeting. Approximately 20 people were in attendance.

The meeting included several presentations aimed at the NGSS and engineering-related topics. The first, “NGSS and Ohio: Helpful Information for Teachers” by special guest David Vernot (Butler County Educational Service Center) engaged the attendees in a number of activities to aid them in better understanding the structure of the NGSS. This was followed by another pair of special guests, Caryn Jackson and Todd Bolenbaugh (Tolls Career Academy) taking the participants through activities developed by the American Society of Materials used to teach materials science at the high school level in their presentation, “Materials Matters.” Contributed talks in the afternoon were “Designing a PVC Flute by the Formulas” and “GeoGebra for Physics” (Lenore Horner, The Seven Hills School); “Problems With Problem Solving Tactics II” (Sandra Doty, Ohio-University-Lancaster); “Developing and Assessing Scientific Reasoning in a First-year Physics Lab” (Krista Wood, University of Cincinnati – Blue Ash); and Solar/Wind Hybrid Power for Remote Site” (Mark Plano Clark, University of Cincinnati)

At the business meeting portion of the program, the following officers were elected:

President-elect: Lenore Horner (The Seven Hills School)  
Vice-President for 2-year colleges: Sandy Doty (Ohio University - Lancaster)  
Treasurer: Bill Kuhlman (retired, St. Xavier High School)

### **State Science Day**

On the morning of Saturday May 16, 26 physics educators from central and southern Ohio served as judges at Ohio’s State Science Day competition to determine the awarding of physics prizes for students in high school and middle school. As he has for many years, Gordon Aubrecht (The Ohio State University-Marion) coordinated the efforts of judging well over

100 projects in just a few hours. The prizes are awarded by the Southern Ohio Section of AAPT, with the generous financial support of the Ohio Section of APS. The following students were recognized:

#### Elementary:

First: Matthew J Doty, Granville Intermediate ES; The Effect of Seam Height on the Speed and Motion of a Pitched Baseball  
Second: James D Barr, Millersburg ES, The Best Insulator  
Third: Jacob Wayde Bowerman, L T Ball Intermediate ES, Hot or Not: How Temperature affects Physical Properties

#### Middle School:

First: Shifra R Narasimhan, Athens MS, Shedding Light On Molecular Interactions  
Second: Samuel C Harrell, Olentangy Shanahan MS, Force: Do LEGO plates require more than bricks?  
Third: Mr. Emerson R Day, St Michael Consolidated, What is the Optimal Wind Turbine Blade Pitch at Different Speeds?

#### High School:

First: Aditya Jog, William Mason HS, Novel Metered Dose Inhaler Design to Improve Drug Delivery to the Lungs  
Second: Richard B Jin, Maumee Valley Country Day School, Sulfurization of Thin-Film Copper Antimony Sulfide for Low Cost and Environmental Friendly Solar Cells  
Third: Jacob Sniezek, Carroll HS, Dayton, The Effect of Drag on Various Automobile Shapes

### **Upcoming Meetings**

The upcoming fall meeting will be in early October (exact date TBA) at Mason High School, Mason, OH. Dee Dee Messer will be the host, and John Rowe will be leading the planning committee.

Kathy Harper, Section Representative

—Kathy Harper, Section Representative

## **Wisconsin Section**

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The Fall 2014 meeting of the Wisconsin Association

of Physics Teachers was held on  
October 24-25, 2014 at Marquette University in  
Milwaukee, Wisconsin.

The SPS Keynote Speaker was Destin from Smarter  
Every Day

The banquet speaker was Fr. George Coyne, former  
Director of the Vatican Observatory  
His talk was titled: The Dance of the Fertile Universe:  
Chance and Destiny Embrace

### **Papers presented:**

Implementing “Six Ideas that Shaped Physics” at  
Marquette University  
Benjamin Brown, Marquette University

Utilizing Errors (i.e. Mistakes)  
Alan Scott, UW-Stout  
OPL Interfaces and Minefield Optimization  
Demetrious T. Kutzke, Marquette University

Ice Cube and the New Era of Neutrino Astronomy  
Suruj Seunarine, UW-River Falls

Theory and Experimental Setup to Calculate the  
Buoyant Force of a Liquid at Different Temperatures  
Joseph Otu, UW-Waukesha

Microwave Kinetic Inductance Detectors and their  
Implications in Dark Energy Research  
Emily Macuk, Marquette University

The Effects of Void Defects on Domain Wall Motion in  
Ferromagnetic Nanowires  
Kirsten Blagg, Marquette University

A Review of the 2014 Wisconsin STEM Educational  
Leadership Summit  
Matt Evans, UW-Eau Claire

On an Early Proposal for a Unified System of Units  
Kenneth Mendelson, Marquette University

Another Look at Elementary but Surprising Facts  
about Evaporation  
Jim Mallmann, Milwaukee School of Engineering

Gender Bias in Introductory College-Level Physics

Textbooks  
Katherine Finegan, UW-Milwaukee

Strategies for Assessing Student Laboratory Skills  
within the Physics Program  
Steve Sahyun, UW-Whitewater

Using Lecture Tutorials in Astronomy and  
Astrophysics  
Chris Stockdale, Marquette University

The Role of Size and Crystallinity on Magnetic Nano-  
particle Response  
Hoan Henry Le, Marquette University  
Workshops:  
Backward Scaffolding in Astronomy  
Dan Lyons, Carthage College

Submersibles and Archimedes  
Lori Nesbit, Racine Case High School

Inclusive Activities in HS Science  
Ashley McFaddin, Oak Creek High School

Direct Measurement Video  
Matt Vonk, UW-River Falls

Physics and Paintings  
Frank Lamelas, Worcester State University

Spacetime Applet  
Randy Wolfmeyer, Marquette University

Modeling Method of Instruction  
Mark Lattery, UW-Oshkosh

A Physics Educator’s Guide to Developing Animated  
Graphs and Diagrams in Excel  
Mark Lattery, UW-Oshkosh and David Tamres, UW-  
Stevens Point

—A. 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)

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