

## Alabama Section

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The Alabama Section of AAPT Annual Meeting was held on January 27, 2018 at James Clemens High School in Madison, Alabama. Our host was physics teacher and AAPT member Tammy Simons. The meeting opened with registration and a Welcome from our host in the Harvard Room of the high school. Tammy shared about the set up/options for the meeting and shared the innovative methods used at James Clemens HS. Announcements from the Winter AAPT Meeting in San Diego were shared by the Section Representative and an invitation to join the National AAPT. Input from the Section was solicited as to how AAPT could help them.

There were options for every hour of sessions. Presenters were from NASA, the US Space Center, Ala Science in Motion, and many Alabama classrooms both public and private.

There were Silent Auction items to raise funds for the Section. At the business meeting a 2019 Vice President was elected, Bill Ossenfort, Troy University/Science in Motion Physics Specialist. The 2020 meeting will be held in South Alabama, possibly at Andalusia High School. Mark Rupright, Birmingham Southern College, and the 2018 Vice President will assumed the president's position. He will plan the annual meeting in early 2019 to be held at Birmingham Southern College. The Vice President election will smoothly continue the Section and its leadership. For K-12 teachers in Alabama Public Schools, professional development credit was given with the help of the Alabama Department of Education. The meeting in the early months of 2019 allows teachers to use the great labs, demos, teaching techniques, etc. they receive at the Section meeting in their classrooms before the end of the school year. Our Section Representative will attend the Summer '18 and Winter '19 meetings of AAPT.

The APEX Grant from MSP and in partnership with AAPT is ending in the summer of 2018. There are possibilities that the extension of the grant will help fund local Alliances in the 4 major cities in the state and help teachers pay for attending Professional Development meeting in Alabama and the US. The Section is hoping for their support.

*—Tommi Holsenbeck , Section Representative*

## Idaho Utah Section

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The annual meeting of the Idaho-Utah Section of the American Association of Physics Teachers was held February Friday/Saturday 23-24 2018 at the BYU-I campus in Rexburg, ID. The local organizer and current president was Matt Zachreson, and the meeting was wonderful, although sparsely attended mainly due to some weather concerns (we had a fairly significant winterstorm come through the area both during the week before and the weekend of the conference). A no-host dinner Friday evening at a local pizza and pasta buffet was followed by the ever popular demo show, where several attendees showed off their favorite physics demos. Saturday morning a light breakfast led to a morning session of talks and presentations, followed by a mid-morning snack and student poster session. A second session of contributed talks got us through to the luncheon and business meeting, where A spate of elections and announcements were on the agenda. The announcements included a reminder of all the programs and benefits available through AAPT and a reminder that the National Meeting will be held in our section next year, the first one since 2005. The Summer meeting will be held in Provo in 2019. Initial plans were made about garnering section help for the various responsibilities associated with hosting a national meeting. We also made plans for updating the mailing list and encouraging more younger faculty to be involved with the section. Then two important

elections resulted in Brian Pyper from BYUI being reelected as the Idaho-Utah Section Representative, and Daryl Macomb from Boise State being elected as president-elect. That means the current list of section officers stands as follows:

Past President: Adam Beehler - UofU  
President: Matt Zachreson - BYUI  
Vice President: James Coburn - USU  
President Elect: Daryl Macomb - BSU  
Section Rep: Brian Pyper - BYUI

—*Brian A Pyper PhD, Section Representative*

## Long Island Section

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Over 25 participants gathered at Mephram High School on Saturday, April 14th for the LIPTA annual spring conference. The Master Teachers Group of Long Island did an excellent job of informing the group about current trends in the teaching of all levels of physics on both the state and national levels.

The conference began with opening remarks from Bill Leacock who welcomed everyone to his home school and beautifully organized classrooms. Bill encouraged participants to consider applying to the Masters Teacher group and introduced the current Master Teachers who would be contributing to the morning's events.

Joe Hanley, Master Teacher from Bay Shore High School, began the conference with an overview of the Next Generation Science Standards (NGSS) and how New York State has used those standards to develop its own set of learning standards with a few minor changes. The New York State Science Learning Standards (NYSSLS) is slated to be implemented over a five year transition period. The NYSSLS is an integration of content and application which reflects how science and engineering is done in the real world. It is aligned with the current Math and ELA common core standards on all grade levels. It involves a three-dimensional learning process involving disciplinary core ideas, cross cutting concepts and engineering practices. The big change is the addition of the engineering design, even though that has often been a part of many physics classrooms already. The NYSSLS will start students learning and developing science skills as early as pre-kindergarten. The progression of a particular science concept shows

an increasing sophistication as it evolves from pre-kindergarten all the way through to high school.

Justin King, Master Teacher from Commack High School, showed how teaching will need to make adjustments to fulfill the new standards. Again he recognized that most teachers already do many of the things listed in the standards. However, he noted that many teachers will need to work on having students ask their own questions and engage in arguments from evidence that they have gathered. Justin focused on how to get students to ask their own questions which will eventually lead them to develop their own experiments to help answer these questions. In order to help us learn how to do this, he introduced us to a question formulation technique which requires 4 rules: Ask as many questions as you can

Do not stop to discuss, judge or answer any questions  
Write down every question exactly as stated  
Change any statements into a question

To practice the technique, Justin showed a short video on bungee jumping and then we split into groups to develop 20 questions related to the video. He suggested that it is a good idea to have the video playing in the background while doing this process. After completing this task, the group had to go through their list of questions and label each question as either close ended (can be answered definitively) or open ended (needs some analysis). The next part of the exercise was to modify one open ended question to make it a close ended question and to make one close ended question an open ended one. Then the group had to circle three questions that they would like to eventually figure out. The final step in the process was for the group to choose one of those three questions that would lead to experimentation and analysis.

Rich Gears, Master Teacher from Sachem East High School, followed Justin by giving everyone a blank sheet of paper that was then folded into fours. He gave out a box filled with all different kinds of springs. We had to trace three springs into three boxes on our paper and in the last box, we had trace a spring that has changed its state by compressing or stretching it. In each box, we had to verbally describe the drawing of the spring. These descriptions could include size, thickness, stretchiness, etc. Then we had to look for patterns and write these on the bottom of the sheet. After that, we had to flip over the paper and write questions about the springs. Finally, we had to list the springs by categories such as length, width, stretching vs. compression, etc. Rich uses this exercise

as an introduction to springs so the students get a chance to play with them a bit before he leads into Hooke's law and spring energy.

During a brief coffee break, a brief presentation about Tania's plea for monetary donations for desks in Tanzania was given. Participants were very generous and a \$600 dollar check was sent to help Tania reach her goal. LIPTA Recording Secretary, Bill Lynch, and retiring West Islip teacher, Nancy Budka, also offered books and other physics paraphernalia from their collections.

The final presenter for the day was Rich Slesinski, Master Teacher from Syosset High School. He gave an introduction to the book, *TIPERS: Sensemaking Tasks for Introductory Physics* by CJ Hieggelke, S Kanim, DP Maloney & TL O'Kuma. *TIPERS* is a compilation of conceptual and explanation type of questions that require a more comprehensive understanding of physics phenomena. We were given Chrome Books to use as Rich showed us how to use the program Pear Deck to answer questions using sample TIPERs questions. The Pear Deck program can easily be used to show comparisons among students' explanations and lead to more in-depth classroom discussions. Rich gave an example of each of the ten types of TIPERs questions to practice. At the end of the conference everyone was given a copy of the *TIPERs* manual thanks to Bill Leacock who reached out to the Pearson company, which supplied the books for the conference.

On Wednesday, May 23rd, the New York State Master Teachers presented solutions to the Advanced Placement 1, 2, and both C exams to the Long Island Physics Teachers Association members at the Western Suffolk BOCES.

—*Richard E. Slesinski Jr.*, *Section Representative*

## Michigan Section

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For the first time since the fall of 2004, MIAAPT and the Ohio Section of the American Physical Society (OSAPS) joined forces for a vibrant and engaging joint section meeting. The meeting took place March 23 – 24, 2018, at Michigan State University (MSU) in East Lansing, Michigan. MIAAPT members are deeply grateful for the time and efforts of Marcos (Danny) Caballero, physics faculty member and

director of the Physics Education Research Laboratory (PERL) at MSU, as well as our 1st Vice President Taoufik Nadji (Interlochen Arts Academy), in planning and coordinating the various aspects of the joint meeting. About 20 MIAAPT members were among the those attending. MIAAPT President Laurence Tarini (U. Michigan-Flint) presided over the sessions of contributed talks focusing on physics education. (Note: The accompanying registration list does not include several MIAAPT members who attended, due to the fact that these members arrived on Friday evening but the MIAAPT registration desk did not open until Saturday morning.)

Overview of meeting activities. The meeting began on the evening of Friday, March 23, with two plenary talks, a catered dinner, and a contributed poster session. The meeting continued the following day, Saturday, March 24, with a plenary talk and parallel contributed sessions in the morning and in the afternoon. Please see the accompanying "meeting at a glance" and meeting epitome for a detailed schedule of activities.

Theme of meeting and plenary speakers. The joint MIAAPT/OSAPS meeting was designed with the theme, "Promoting a diverse and inclusive future for physics and astronomy." The focal point of the meeting was a series of plenary talks by four (4) invited speakers—all women, no less! In order of appearance throughout the two-day meeting, these speakers were:

- Monica Plisch, American Physical Society, "APS Programs to Promote Diversity and Inclusion" (Fri. March 23)
- Susan White, American Institute of Physics, "Diversity Inclusion: Not everything that counts can be counted, and not everything that can be counted counts" (Fri. March 23)
- Emily A. Dare, Michigan Technology University, "Fostering Physics Learning and Interest for Middle School Girls and Boys through STEM Integration" (Sat. March 24)
- Adrienne Traxler, Wright State University, "Gender in physics education: Looking back and looking forward" (Sat. March 24)

—Bradley S. Ambrose, Section Representative

## Northern California/Nevada Section

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On April 14, 2018 Contra Costa College graciously hosted the Spring Meeting of the Northern California/Nevada section of the AAPT. Despite the unfortunate time conflict with the March for Science, 70 section members were in attendance.

The day opened with a selection of workshops, two from PASCO and Vernier, and one on Radioactivity by longtime member Bernard Cleyet. The keynote speaker was The Paper Airplane Guy, John Collins, who did an excellent job of detailing the science of flight at a level appropriate for science educators.

There was a short business meeting where next year's officers were elected. There were reports from both the treasurer and section rep. The topic of the discontinuance of the physics program at James Lick HS was brought to the floor. James Lick HS has an underserved population, and would be the only school in its district not to offer physics. The membership voted unanimously for the officers to draft a letter of support. In the time following, section membership has been actively involved in efforts to preserve the program.

Lunch featured tacos and good conversation. As many physics educators are isolated, our section schedules 90-minute lunches with intention.

Following lunch there was a raffle, and a panel on incorporating educational technology. The panelists were Jon Celesia, Bree Barnett-Dreyfuss and Dan Burns. This was followed by a pair of workshops, Clifton Roozeboom spoke on the physics of probeware, and Mike McCusker went through the operation of microwave. We closed with an extended version of Share & Tell.

—David Marasco, Section Representative

## Oregon Section

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The Fall meeting was well attended by TYC with approximately 10 members. There was an additional approximation of 10 members from 4YC. A few high school teachers were also present. Below is a schedule

of events. One of the highlights was a presentation from Max Ginsburg, who is not a physicist, about a new wave energy design. Their design won the group of backyard engineers a prestigious \$1mil governmental grant to scale up their design. Every physicist in the room wanted to do engineering and vigorous discussion followed the presentation. Other interesting events was a tour of the undergraduate optics lab at Oregon Tech and a presentation about the Scholarship of Teaching and Learning by Dennis Gilbert and Wendi Wampler. The second half of the day had two great workshops, one by Paul Bunson on Space-time diagrams, and another by Tamar More about Physics Theater.

—Kenneth C. Walsh, Section Representative

## Southern California Section

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On Saturday, April 21, 2018, sixty members of the Southern California Section of AAPT gathered at Long Beach City College for an exciting day filled with new physics and helpful advice for the classroom.

The day began with an informative workshop by Clarence Bakken, Gunn High School and Vernier. Participants were able to get their hands on the latest Vernier sensors and Graphical Analysis 4 app.

The meeting was called to order by SCAAPT President Cliff Gerstman and local host Ryan Carroll.

The meeting included several fascinating invited presentations: Daniel Mehay from Horizon Educational discussed his participation in the Hydrogen Horizon Automotive Challenge (H2AC). Through this project, his students gain problem-solving skills and learn about climate change, environmental sustainability and alternative fuels.

Amy Fredericks, Long Beach City College, gave a planetarium show using the departmental facilities. She showed the constellations and other reference points of the sky along with information about upcoming NASA missions.

Michael Nauenberg from UC Santa Cruz shared his work on Newton's historic development of fundamental concepts in his Principia. He demonstrated how Isaac Newton may have drawn orbits for central forces with a pencil and a ruler.

Several other SCAAPT members also gave engaging contributed presentations:

- Larry Stein, University of La Verne- Your Demo Budget: Constrained by Hooke's Law? Naww!
- Galen Pickett, California State University Long Beach- Updates from the PhysTEC Site at CSU Long Beach
- Amy Fredericks, Long Beach City College- Current Events in Astronomy
- Smbat Avetyan, CSU Los Angeles- Group Dynamics in the Physics Tutorials at CSU Los Angeles
- Clarence Bakken, Gunn High School and Vernier- Taking Probeware Into Our Students' Environment
- Sanaz "Sunny" Taghizadeh, UCLA, Hoag Hospital- Magnetic Resonance Imaging: The Applications, The Science, and Lab Ideas
- James Lincoln, AAPT- Secrets of the Periodic Table

The ever-popular Show 'n' Tell featured demonstrations by Bryn Bishop (Stephen Hawking tribute), Larry Stein (entropy), James Lincoln (sonic boom), Ryan Eagle (pierce) (ebook resources), John Mallinckrodt (SCAAPT history), Lee Loveridge (hydrogen car), Galen Pickett (circularly polarized reflections), Shawn Kirby (fluoresce) and Dean Papadakis (electrical current).

Elections were held and SCAAPT congratulates the following winners:

- President: Cliff Gerstman, Middle College High School
- Past-President: James Lincoln, PhysicsVideos.com
- VP for 4 Year Colleges: Chad Kishimoto, University of San Diego
- VP for 2 Year Colleges: Lee Loveridge, Pierce College
- VP for High Schools: Bryn Bishop, Canyon Crest Academy
- Web Manager: Jeffrey Dukes, Port of Los Angeles High School
- Treasurer / Secretary: Nuria Rodriguez, Santa Monica College (retired)
- Section Representative: Bradley "Peanut" McCoy, Asuza Pacific University

The meeting ended with our traditional "World

Famous Order of Magnitude Question" discussion, led by Bill Layton, James Lincoln and Cliff Gerstman, and the raffle of donated door prizes.

SCAAPT thanks its corporate sponsors Flinn Scientific, Arbor Scientific, Vernier and Office Depot— for their support and donation of door prizes. SCAAPT thanks the Long Beach City College Physical Science Department for hosting the meeting. Thanks also to Chad Kishimoto, for serving as Program Chair of the meeting.

—Bradley K. McCoy, Section Representative

## SACS Section

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SACS-AAPT met March 2-3, 2018 at Dalton State University in Dalton, Georgia. Chris Wozny was the host and program chair. The meeting started with a banquet on Friday evening. The keynote speaker was Dr. Woody Mader, who about the application of physics in his career as an industrial chemist working on the dyeing of carpet fibers in a presentation entitled "Colorization of Textile Fibers."

On Saturday morning, there were three concurrent workshops conducted by Ann Robinson/David Todd on Electrostatics on a Rainy Day, Joey Konieczny on Continuing the Argument for Physics First, and Larry Engelhardt on Integrating Computation into Introductory Physics

In addition, there were three posters and eight paper presentations after the workshops.

Twenty-five people attended the meeting.

Larry Engelhardt, 2017-2018 President, conducted the section business meeting.

—Bob Powell, Section Representative

## Southern Ohio Section

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The spring meeting of the Southern Ohio Section was held on Saturday April 1 at Reynoldsburg eSTEM Academy. Many thanks to Joe Griffith for volunteering the space and Chad Naiman for serving as our host. Since the day's agenda included the Flying Bernoulli Brothers and Sister (Gene Easter, Bill Reitz, and Mary Kay Patton), they really didn't know what they were getting into when they offered to help. Of course, the 20+ attendees assisted with the clean-up, so everything turned out fine.

In addition to their preview of the summer AAPT meeting's demo show, the Bernoulli Bros & Sis led a make 'n take session. We also heard from Chris Orban (The Ohio State University – Marion) about his approach of strengthening student understanding of physics content through programming computer games.

We got out some boxes of tissues and remembered the life and legacy of Gordon Aubrecht, co-founder of the Ohio Section, and a presence in physics education locally, nationally, and internationally. The session was coordinated by Mark Plano-Clark (University of Cincinnati). We heard about Gordon's contributions to faculty governance by colleague Doug MacBeth of Ohio State, revisited his role in the Ohio section through Elizabeth George's (Wittenberg University) reflection, and were reminded of his passion for working with pre-service and in-service science teachers in Jessica Creamer's tribute.

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

President-elect: Jeff Rodriguez (Anderson High School)

Vice-President for high schools: Doug Forrest (Pickerington High School - North)

*—Kathy Harper , Section Representative*

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

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