

THE DIALOG



The Newsletter of the Southern Ohio Section of the American Association of Physics Teachers

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Spring 2015 OFFICER ELECTIONS

During the Spring 2014 meeting, officers for the following positions will be elected:

- President Elect
- VP for 2 year Colleges
- Treasurer

Each position is either a 3 year term or a 3 year commitment (President Elect serves subsequently as President and then Past President)

If you are interested in serving in any of these capacities OR if you would like to nominate someone for a position, please contact Mark Plano-Clark, President of SOS-AAPT (mark.planoclark@uc.edu)

NOMINATE A FRIEND TODAY!!

NEWS!

Guess who is coming to Cincinnati July 22-26, 2017?? The AAPT!!!

The national meeting of the AAPT will be hosted in Cincinnati in 2017!

Thank you to all of the members who helped make this possible!!!

SOS/AAPT SPRING 2015

Hosted by Anna High School, 204 South Linden St, Anna, OH 45302 Host: Vicki Quinter

Topic: Engineering by Design and the Next Generation Science Standards (NGSS)

Also: Boomerang workshop by Beverly Taylor and Solar Wind Hybrid system by Mark Plano-Clark

Saturday, April 18, 2015

NEW OFFICER ELECTIONS! NOMINATE YOURSELF OR A FRIEND!

- Come meet with your colleagues from Southern and Central Ohio!
- Pick up a few new ideas for your classroom and share a few of your own good ideas!
- There is still time to present a contributed paper or a "How I do it" demo! **SUBMIT AN ABSTRACT BY GOING TO THE REGISTRATION WEBSITE BELOW!**

REGISTER NOW AT:

<http://sosaapt.weebly.com/spring-2015---saturday-april-18-2015.html>

BRING YOUR FRIENDS - PLAN TO COME!

UPCOMING MEETINGS:

March 13-14, 2015	A special regional meeting, Next Generation Physics Teaching, hosted by the Kentucky section of AAPT, with assistance from the Appalachian and Southern Ohio sections, is coming up on March 13-14, 2015. Located in beautiful facilities at Eastern Kentucky University, the program will feature a variety of sessions, ranging from workshops on teaching astronomy (by national expert Tim Slater) developing problem solving skills (David Maloney), the Investigative Science Learning Environment (Eugenia Etkina), or using the Vernier GoMotion (free unit to the first 25 registrants) to plenaries on cocktail physics (Jennifer Ouellette) to a variety of research presentations. There will be also ample opportunity for talking shop with other attendees Registration is just \$45 and includes some meals. The organizers have also arranged for very reasonable rates at local motels. For more information, go to http://ngpt.aaptsections.org/
July 25 - 29, 2015	AAPT Summer Meeting - College Park, MD Regular Abstract Submissions Close: Feb. 25, 2015 Late Abstract Submissions Close: May 6, 2015 http://www.aapt.org/Conferences/sm2015/

Chautauqua Short Course

Active Learning in Introductory Physics Courses: Research-Based Strategies that Improve Student Learning

NEW: Including *RealTime Physics* 3rd Edition, *Clicker Interactive Lecture Demonstrations* and *Video Analysis*

June 18-20, 2015 • Portland, Oregon

Presented by: David Sokoloff • Priscilla Laws • Ronald Thornton

This hands-on course is designed for college, university and high school* teachers of physics interested in making learning in their introductory courses more active. Participants will be introduced to research-validated strategies for each component of the course: lecture, lab, problem-solving, modeling and video analysis. Course fee is \$200. For more information: <http://pages.uoregon.edu/sokoloff/CHAUT.htm>

*One or two graduate credits are available from the University of Oregon for \$90 per credit.

For registration and payment information, please visit: http://academicextension.uoregon.edu/course_desc.php?CourseKey=724907 or call 800-824-2714; or e-mail academicextension@uoregon.edu

**SOS/AAPT Executive Meeting Minutes
Seven Hills Upper School, Cincinnati, OH
11 October 2014**

Present: Gordon Aubrecht (Member-at-Large), Kathy Harper (Section Rep), Lenore Horner (Past President), Matthew Kennedy (VP for Secondary Schools), Kathy Koenig, Bill Kuhlman (Treasurer), John Rowe (President Elect), Mark Plano Clark (President), Krista Wood (Secretary)

Meeting called to order by President Plano Clark at 8:35 am.

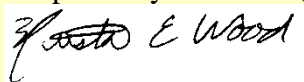
- I. Minutes from SOS/AAPT March 15, 2014 Executive meeting distributed by email and in Dropbox. They will be approved via email vote or at next meeting??

- II. President Report – Mark Plano Clark
 1. Section Meetings
 - a. Lessons Learned about planning and hosting meetings
 - BEFORE Meeting
 - Advertising – Need to create better advertising, hooks. Need to send out abstracts to generate interest.
 - Set a deadline for getting info to Sandy Doty for newsletter.
 - Set a deadline for abstract submission so abstracts can be used for advertising and generating interest.
 - Facility planning – Tell host what kind of rooms and equipment are needed.
 - DURING Meeting
 - Schedule 2 workshops
 - AFTER Meeting
 - Newsletter will go out shortly after Fall meeting.
 - Feed info to Sandy Doty for newsletter and John Rowe for planning for next meeting
 - b. Spring 2015: April 18 at Anna High School, Anna, OH, north of Dayton
 - Lenore Horner will act as liaison to help Anna HS hosts with meeting details.
 - Theme: Engineering by Design and NGSS Standards
 - Will have a call for proposals within the theme – Engineering by Design. Ask for speakers to share their engineering projects and related talks.
 - Kathy Harper suggested possible speakers:
 - Speaker from the Honda plant in Anna,
 - Hugh Ross (Indianapolis) who has taught engineering by design,
 - an aero engineer who works at GE.

- Topic ideas included:
 - Flipped Classroom
 - Teaching Physics with Toys Workshop boomerangs (Beverly Taylor interested),
 - Energy Workshop
 - Fall 2015: Need host site.
2. Offices to be elected in Spring 2015. John Rowe will create potential list.
- President-Elect
 - VP for 2 Yr College
 - Treasurer
- III. Treasurer – Bill Kuhlman
- a. Kevin needs to know who paid their dues at Spring meeting. One name didn't come through PayPal.
 - b. State Science Day checks haven't cleared. Gordon Aubrecht suggested calling Ohio Academy of Science to ask for students' email. Checks sent to home address. Bill Kuhlman will follow up.
- IV. Section Representative report: Kathy Harper
- a. Regional Meeting March 13 & 14, 2015
 - Richard Gelderman – can we find a big name draw?
 - Jon Gaffney will be host at Eastern Kentucky University.
 - Tim and Stephanie Slater will come do workshops
 - Lawrence Krauss not available.
 - Oakridge University has money for outreach speakers – Mark Plano Clark will investigate.

Meeting adjourned 9:05 am.

Respectfully submitted,



Krista E. Wood
SOS/AAPT Secretary

**SOS/AAPT Business Meeting Minutes
Seven Hills Upper School, Cincinnati, OH
11 October 2014**

Meeting called to order by President Plano Clark at 2:38 pm.

- I. Minutes from SOS/AAPT March 15, 2014 Executive meeting were distributed by email and in Dropbox. They will be approved via email vote or at next meeting?

- II. President – Mark Plano Clark
 - a. Appalachia, KY, TN Regional Meeting, March 13 & 14, 2015
 - Slaters, Tim and Stephanie. Will do Astronomy workshops
 - Jon Gaffney will host at Eastern Kentucky University
 - Will try to reach out to rural physics teachers to encourage attendance
 - Working on keeping cost low. Working with hotels.
 - Organizers are passionate about it.

- III. Treasurer Report – Bill Kuhlman
 - a. \$2043.17 1yr CD
 - b. \$3162.12 checking
 - c. \$200 of State Science Day checks have not been cashed.

- IV. State Science Fair – Gordon Aubrecht Saturday, May 16, 2015. We will need judges

- V. SOS/AAPT Section Representative to AAPT Report - Kathy Harper
 - a. National meeting in Minneapolis Summer 2014
 - 1200 attendees.
 - Awards – Bruce Sherwood and Ruth Chabay received Halliday and Resnick Award
 - Eugenia Ektina received Millikan Award
 - Donald Wilson received Klopsteg Award
 - b. Future National Meetings
 - Winter 2015, San Diego, CA, January 3-6
 - Summer 2015, University of Maryland, College Park, MD, July 25-29
 - Winter 2016, New Orleans, LA, January 9-12
 - Summer 2016, Sacramento, CA July 16-20
 - Winter 2017, Atlanta, GA February 18-21

- VI. National AAPT - Summer 2017, July 10-15, 2015, likely Cincinnati, OH
 1. Upcoming site visit from National AAPT. Final decision will be announced at Winter AAPT meeting.
 2. Location issues

- UC can't host actual meeting because they don't have the facilities needed.
 - Weekend workshops will be on UC campus.
 - Actual meeting may be Downtown Hilton or NKy Convention Center. TBD.
3. Brian Chism National AAPT – unless someone on your end says no, AAPT will be there.
 4. Suggestions if National AAPT occurs in Cincinnati
 - Section can use opportunity to raise funds, e.g. sell t-shirt
 - Section can host a resource room to help attendees.
 - Suggested offering 1 yr free SOS/AAPT memberships to local teachers who volunteer at National AAPT 2017. Could increase local section attendance and provide draw to AAPT.
 5. National AAPT have been looking for an increasing number of volunteers to run things behind the scenes and workshop days.
 - If HS teachers, there may be an incentive TBD
 - Great opportunity to bring more local teachers to a national meeting

VII. Officers to be Elected Spring 2015.

- a. President-Elect (should be from college)
- b. VP for 2 Yr College
- c. Treasurer (suggest a candidate who is computer savvy)

VIII. Reformed Classrooms

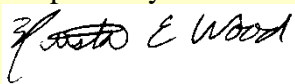
- a. Miami U. has beautiful new Scale Up classrooms. Jennifer Blue is willing to host.
 - Classroom to do active learning in groups of 99.
 - Combined lecture and lab into one class that meets 6 hrs/week
- b. OSU Studio Classrooms took 5 years to implement

IX. Thank you to Lenore for hosting this meeting.

Meeting adjourned 3:01 pm

Door prizes distributed.

Respectfully submitted,



Krista E. Wood
SOS/AAPT Secretary

Abstracts Fall 2014 Meeting

Dwain Desbian	<p><i>Revitalizing Courses with Alternative Techniques in Problem Solving</i> How do we help our students develop a deeper understanding of scientific models in introductory physics? This workshop will introduce participants to several alternative techniques to solving physics problems for scenarios involving 1-D and 2-D motion, momentum, and energy topics. Using existing representational tools in new ways, the alternative problem solving methods will be presented as a means of enhancing student understanding of scientific models. One such tool specifically targets student abilities in constructing free body diagrams. Participants will be provided time to practice using the new tools, as well as discuss how the new tools could be used in their classrooms. break</p>
Terry Toepker	<p><i>A Candle At 10 Miles</i> From a Centrum Silver Ad: "You can see a candle at a distance of 10 miles." 1. Calculate the number of photons that would reach your eye from a 1 watt source assuming a monochromatic light, 570 nm. Neglect any atmospheric effects. 2. Considering the curvature of the earth, how high must you be to see the candle on the horizon? Use the 1-2-3 equation.</p>
Sandra Doty	<p><i>Problem with Problem Solving Strategies</i> Almost every introductory physics textbook includes a problem solving strategy intended to guide the novice problem solver or, at least, get them started. Those strategies, more or less, all look the same. Speaking for myself, I know that I promote them as a way of helping the student organize the task before them and clarify their thinking. But do they work? Can we correlate the ability to perform the steps in a problem solving strategy with an ability to solve problems? In this talk, I will provide preliminary results from an investigation aimed at trying to answer this question.</p>
Gordon Aubrecht	<p><i>Some challenges in working with middle school teachers</i> There are multiple challenges in working with middle school teachers. Content knowledge is problematic. Basically, middle school teachers should have a master's in geology, biology, physics, and chemistry—and be able to work effectively with adolescents! Obviously, this is far from reality. Colleges of education fail to prepare teachers for the reality of the administrative-driven classroom. Inquiry is lectured about but not practiced. The granting agencies want quantitative data, but how does one provide these data? The talk will discuss these issues and some possible solutions we developed.</p>
Kathy Harper	<p><i>Analyzing Peer Review of Writing Feedback</i> One goal of the Fundamentals of Engineering for Honors sequence at The Ohio State University is to develop strong technical communication skills. As part of a "cornerstone" design-and-build robotics project for second-semester engineering majors, teams write a thorough technical report. As part of the scaffolded approach of developing the report, students engage in a peer-review of writing exercise based on a draft of the report's first two sections. This study investigated the types of feedback students provided each other, the quality of that feedback, and the modifications made to subsequent drafts of the report.</p>
Darwin Church	<p><i>Tools for the Flipped Classroom</i> After trying multiple types of technology over the past few years to help me flip my classroom, I have settled on using Screencast-O-Matic with a touch screen computer and a Smartpen. In this presentation I will explain what I do and why I chose them, addressing the pros and cons of each.</p>
Lenore Horner	<p><i>Hands-On Video/Screencasting</i> Time, and some basic instructions, to try your hand at making a screencast or a video teaching some small bit of content. Hopefully volunteers will share their work at the end.</p>

Abstracts Spring 2014 Meeting

Aaron Titus	<p>Physics on steroids -- how to give your physics program a shot in the arm.</p> <p>I like to define undergraduate research as asking interesting questions and finding answers to those questions. Video analysis is one of the most economical and flexible experimental techniques to enable students to do undergraduate research, starting with introductory physics. Particular features of Tracker--a free cross-platform, open-source video analysis application--allow students to easily change reference frames, compensate for panning and zooming of a camera, auto-track objects, and test a numerical model. Computational modeling, using tools such as Easy Java Simulations and VPython, allow introductory students to solve problems numerically so that they can compare predictions from theoretical models to experimental results. Student projects will be demonstrated, with an emphasis on the benefit of undergraduate research in the freshman and sophomore years. If you want to hook students on the excitement of independent discovery with a budget of \$300 or less (for a camera), then video analysis and computational modeling are for you.</p>
Mike Sokoloff	<p>QuarkNet</p>
Christine Farley, Jessie Miller, Andrew Ruth, And Kelly Williams	<p>Effectiveness of Inquiry Based Instruction in a Low Socioeconomic District</p> <p>Marion City Schools has utilized a grant from ODE to support inquiry-based instruction in the middle (6 years) and high school (4 years) science classes. We use common formative assessments (CFAs) and inquiry-based instruction to guide instruction, pacing, and monitor student mastery of learning targets. By shifting to student-lead practices, we have observed growth in both standardized test and classroom scores for both high-achieving and at-risk students. Supported in part by grants from the Ohio Department of Education C1457-OSCI-09-49 (2008-2009), C1667-MSP-10-410 (2009-2010), EDU01- 0000006141 (2010-2011), EDU01-0000007902 (2011-2012), GRT00029161 (2012-2013), and ODE-MSP-10673 (2013-2014).</p>
Kathy Harper	<p>Implementing Peer-review of Writing for Freshman Engineers One goal of the Fundamentals of Engineering for Honors sequence at The Ohio State University is to develop strong technical communication skills. In the first semester there is a heavy emphasis on this via lab reports and memos. As part of the “cornerstone” design-and-build robotics project in the second semester, teams write a thorough technical report. As a first step in scaffolding this major portion of the project, teams draft the first two sections of the report about halfway through the term for a peer review and feedback exercise. This talk describes the details of the assignment.</p>
Lenore Horner	<p>Learning VPython / Glowscript VPython and Glowscript are programming languages intended for first-year physics student use in modeling physical systems. But how does one get started? Brief answers to the following questions will be presented. Which language? How should it be introduced to students? Where and how can a teacher learn enough to be ahead of the students?</p>
Sandra Doty	<p>Science Fair and Student Engagement at all levels Historically, the school science fair has been one of the key mechanisms for engaging students in STEM. For some it marks the beginning of lifelong research interests. The factors which contribute to a strong science fair project and results from a pilot project which explored an alternative venue for science fair will be presented.</p>
Sandra Doty	<p>Fun with water fountains Introducing a fun physics laboratory experiment utilizing video analysis with projectile motion.</p>

Kevin McChesney	<i>The Errors of My Ways</i> The errors of my ways. Giving students complete solutions with mistakes to see if they can spot the error and fix them. It gets really fun when you give them one solution with no mistake in it.
Lei Bao	<i>From Clickers to Web Clickers:</i> The new generation classroom response system and Flip my class with a free web clicker system
Burt Stumpf	<i>Physics And ART</i> The art produced by physicists and used by them in books and in other ways will be presented.

OFFICERS**SECTION REPRESENTATIVE**

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For the latest SOS-AAPT information
please visit our website at:

<http://sosaapt.weebly.com/index.html>

Suggestions?

Questions?

Got an idea on how to improve the
section or ideas on how we can help
you?

**PLEASE CONTACT ANY ONE OF
THE SECTION OFFICERS!**

Contributions to The Dialog may be
sent to the Editor at
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