

# THE DIALOG



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

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## Spring 2016 OFFICER ELECTIONS

During the Spring 2016 meeting, officers for the following positions were elected:

- President Elect – Jennifer Blue
- VP for 4 year Colleges – Terry Toepker
- Secretary – Kevin McChesney

**CONGRATULATIONS!!**

## NEWS!

- **REMINDER:** The National AAPT Meeting will be hosted in Cincinnati in 2017! We encourage all members to help. Please contact one of the board members to volunteer your talent! Contact information on the last page.

## SOS/AAPT FALL 2016

Hosted by Xavier University, Xavier, OH  
Address: 3800 Victory Pkwy, Cincinnati, OH 45207

### *Featured Presentations on the Flipped Classroom:*

**Ron Reifenberger**, Purdue University:  
*“Modern Physics for Engineers, a flipped course at Purdue”*

**Kathy Koenig**, University of Cincinnati: *To Flip or Not Flip: That is the Question*

*Plus lots of cool contributed talks*

**Saturday, October 8, 2016**

**REGISTRATION DUE: SEPT 29, 2016**

**ABSTRACTS DUE: SEPT 9, 2016**

**CONTRIBUTE A PAPER! BRING 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 10 minute paper! **SUBMIT AN ABSTRACT BY GOING TO THE REGISTRATION WEBSITE BELOW!**  
ABSTRACTS DUE **SEPTEMBER 9, 2016**

REGISTER NOW AT:

<http://sosaapt.weebly.com/fall-2016---saturday-october-8-2016.html>

***BRING YOUR FRIENDS - PLAN TO COME!***

SOS\_AAPT Fall Meeting – MEETING ITINERARY  
October 8, 2016  
Xavier University  
Lindner Family Physics Building  
Foyer and Room 101

- 8A.M ---1:00 P.M. Registration , Morning Refreshments  
Lindner Foyer (1<sup>st</sup> Floor)
- 8:30 – 9:00 Board Meeting
- 9:00 – 10:00 Contributed Papers (10 minutes )  
Abstracts deadline September 9,2016
- 10:00 -10:10 Short break
- 10:10- 11:10 Prof. Ron Reifenberger, Purdue Univeristy
- 11:15-12:15 Dr. Kathy Koenig (Active Learning....)
- 12:15 -1:15 Lunch –Xavier Cafeteria (about \$8.00)  
Subway (next to Lindner)  
Brown Bag
- 1:15-2:15 “How I Do It” , Demonstrations, Contributed Papers (10 minutes)
- 2:15-2:30 Mind Storm -.National AAPT Summer Meeting 2017 (Help needed!)
- 2:30- SOS-AAPT business meeting  
Door Prizes
- 3:00 Tour of Xavier Physics Facilities for interested persons.

Free parking is available in the lot just below the Lindner Building. No permit required.

Abstracts:

*To Flip or Not Flip: That is the Question – Dr. Kathy Koenig, University of Cincinnati*

More and more instructors get pressure each year to improve student success and learning. Whether the ultimate goal is to increase the number of students passing state mandated tests or to improve DFW rates (that is, rate of students earning a D, F, or W), instructors are continually seeking proven instructional methods. In recent years the notion of a flipped classroom has received significant attention as many publications have demonstrated its success. Yet, many instructors implement aspects of the flipped classroom expecting immediate and similar results only to find it doesn't go as smoothly or successfully as expected. This begs the question of "what aspects of implementation are important?" as well as "how does one measure these throughout the term to inform future course offerings?"

As a means of addressing these questions, this presentation will focus on an initiative at the University of Cincinnati to improve DFW rates in introductory calculus. During fall semester 2015, efforts were made to improve student success through more activity-based approaches to teaching. Of 14 calculus instructors across 23 sections, five engaged in a fully flipped classroom model. The others used a variety of instructional approaches which spanned from total lecturing to more of a semi-flipped teaching model. A study was conducted to determine the impact of these different approaches on student learning as measured by common course exams and the Calculus Concept Inventory (CCI). This data was supplemented with classroom observations using COPUS as well as student surveys which measured how each student engaged in required course components, such as watching videos, reading the text, completing homework exercises, etc. The research methods, tools used, and results from this study will be presented such that the audience will gain a better understanding for how to assess the impact of different instructional elements in their own classrooms. Although this study is situated in introductory calculus courses, it is transferable to other disciplines and classroom contexts.

*Modern Physics for Engineers, a flipped course at Purdue - Ronald Reifenberger, Purdue University*

A flipped classroom in which information transfer moves out of the traditional classroom has now been a topic of discussion for about 20 years. This talk will review the motivation for and the development of a flipped "modern physics" course for upper division engineering undergraduates at Purdue University. Utilizing Purdue's self-service Video Express recording studios, 85 videos, each ~25 minutes in length, have been videotaped. The videos are hosted on Purdue's nanoHUB (a community web site dedicated to education and research) as well as YouTube. As a result, students now spend the majority of their time watching video lectures on the web. Graded multiple choice on-line lecture quizzes follow each video and track weekly progress. At the end of each calendar week, the class meets for one 50-minute discussion period. To further improve learning, a smartphone based "app" was designed and implemented to deliver researcher-based multiple-choice questions to student smart phones. The "app" dubbed SMASH (Scientific Multiple-choice Assessments for Student Handhelds) focuses broadly on questions relevant to an introductory course in modern physics. The easy-to-use app is designed to supplement lectures, reinforce relevant concepts, and review appropriate vocabulary. The flexible design of the SMASH platform makes it readily adaptable for use in other courses. The improvements in learning, the marked increase in the pace and scope of in-class discussions, and the students' response to the flipped course will be summarized.

**SOS/AAPT Business Meeting Minutes - DRAFT**  
**University of Dayton, OH**  
**9 April 2016**

**Present:**

**Board:** Lenore Horner (President), Mark Plano Clark (Past President), Bill Kuhlman (Treasurer), Krista Wood (Secretary), Kevin McChesney (WebMaster), Gordon Aubrecht (Member-at-Large)

Meeting called to order by President Lenore Horner at 3:00 pm.

- I. Treasurer's Report - Bill Kuhlman
  - Donation: \$100 donation from Ed Sunderhaus (life member)
  - Checking account balance: \$4242.67
  - CD current balance: \$2057.62
- II. Section Rep Report - Kathy Harper
  - No report
- III. Announcements
  1. State Science Day, Saturday, May 14, 2016 – Gordon Aubrecht
    - We need judges. Need total of 30 volunteers. (Have 20 volunteers.)
    - Contact Gordon Aubrecht.
    - Matthew Kennedy volunteered to be Co-State Science Fair Coordinator with Gordon.
  2. SOS AAPT will provide free memberships to teachers of State Science Fair student winners from our area in honor of James Sullivan and his commitment to physics education.  
Gordon Aubrecht and Bill Kuhlman will handle awarding these memberships.
  3. Executive committee of OSAPS voted will donate \$900, thus SOS AAPT will not need to subsidize this year.
- IV. President's Report – Lenore Horner
  1. Elections
    - (a) President Elect – Jennifer Blue
    - (b) VP for 4-year – Terry Toepker
    - (c) Secretary – Kevin McChesney
    - (e) Treasurer in training – Matthew Kennedy will take over the treasurer position after he finishes his term as VP of High Schools in Spring 2017
    - (f) State Science Day judges organizer in training is Matthew Kennedy
  2. Upcoming Meetings
    - a. SOS AAPT Meetings
      - Fall 2016: Oct. 8, 2016 at Xavier University in Cincinnati (Terry Toepker)
      - Spring 2017: TBA somewhere near Columbus. Kathy Harper will follow up.
      - Fall 2017: Oct 13-14 U. Miami in Oxford joint with OSAPS (Jennifer Blue)

## b. National Meetings

- Summer 2016: July 16-20, Sacramento, CA
- Winter 2017: February 18-21, Atlanta, GA
- Summer 2017: July 22-26, Cincinnati at Northern Kentucky Conference Center in Covington, KY
  - T-shirt report (Mark). have a contact and will follow up soon
  - Sites request for Sunday of meeting
  - Traditionally there has been a Sunday, 7/23 High School Teacher Day. We need a host high school in the Cincinnati area somewhat near the convention.
  - Two-Year College New Faculty Experience mentoring group will have their Commencement Conference at UC Blue Ash the weekend prior to the national conference (7/21-7/23). Krista Wood is hosting.
  - James Beatty has been invited to be a plenary speaker. Gordon Aubrecht will follow up.

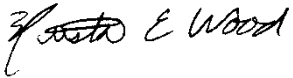
## c. Other Regional Meetings:

December 2016: NSTA Regional Meeting will be in Columbus, OH

VI Mark Plano Clark distributed a number of resources from National AAPT

Meeting adjourned at 3:43 pm.

Respectfully submitted,



Krista E. Wood  
SOS/AAPT Secretary

**OFFICERS****SECTION REPRESENTATIVE**

Kathleen A. Harper (05/31/2018)  
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**PRESIDENT**

Lenore Horner (05/31/2017)  
The Seven Hills School  
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**PRESIDENT ELECT**

Jennifer Blue (05/31/2017)  
Miami University  
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**VICE PRES - UNIV/4 YR. COLL**

Terry Toepker (05/31/2019)  
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**TREASURER**

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**PAST PRESIDENT**

Mark Plano Clark (05/31/2016)  
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**AT LARGE**

Elizabeth George (appointed)  
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Gordon J. Aubrecht II (appointed)  
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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  
[dotys@ohio.edu](mailto:dotys@ohio.edu)