

Michigan Section of the American Association of Physics Teachers

Fall 2012
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<http://www.miaapt.org>

James Gell
2012-2013 President



*The Fall MIAAPT meeting is almost here!
Join us Saturday, October 6, 2012,
at Hope College (Holland, MI)*

Contents

Dr. Lincoln of Fermilab at Fall meeting.....	1
Coming AAPT attractions.....	2
More on high energy physics..	2
Delta College hosts AAPT program for TYC faculty.....	3
Resources for teachers.....	3
Door prize for Fall meeting...	4
HS competitions for 2013	4

Dr. Don Lincoln to Speak at Fall Meeting

Welcome to a new academic year with MIAAPT! Join us as we convene for our upcoming Fall 2012 meeting at **Hope College**, with the main meeting activities on **Saturday, October 6**.

We are delighted to have as our plenary speaker **Dr. Don Lincoln** (see photo below), senior scientist at Fermilab National Laboratory and adjunct professor at Notre Dame. He splits his research time studying data from the Fermilab Tevatron and from the CERN Large Hadron Collider, located outside Geneva Switzerland. Dr. Lincoln has written several books and numerous articles on particle physics, and he is always excited to support physics educators and to share his enthusiasm about physics with the general public.

workshop, oral presentation, poster presentation, favorite demonstration, or "physics puzzler." The deadline is approaching fast: **Thurs., September 20!** To submit a proposal, or for up-to-date details on the meeting, visit our website, <http://www.miaapt.org>.

Second, to help keep our MIAAPT community growing, bring colleagues, students, and friends to join us at the meeting!

Along with Dr. Lincoln's keynote address, the main meeting on Saturday will include door prizes and a contest (see p. 4) for a special prize. Meeting fee is \$10, but first-time attendees and students may attend free of charge! (Cost of lunch is extra.)

To help make our Fall Meeting a success, we need **you!** First, there is still time if you would like to propose a

We hope to see you at Hope College for an exciting Fall 2012 meeting!



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Coming Attractions (Including AAPT!)



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Throughout the coming academic year there are many opportunities for physics, chemistry, physical science, and astronomy teachers to attend conferences, workshops, and meetings. Listed below are upcoming AAPT and MIAAPT meetings so that you can mark your calendars (follow links to active webpages with detailed information about those meetings):

- Winter 2013 AAPT meeting: January 5-9, New Orleans, LA. Theme: "And All That Jazz." <http://www.aapt.org/Conferences/wm2013/>
- Spring 2013 MIAAPT meeting: Henry Ford CC, Dearborn, MI. Meeting date TBD.
- Summer 2013 AAPT meeting: July 13-17, Portland, OR.

In addition to the above meetings, here are several others, both AAPT-related and otherwise:

- Southwest MI Physics Teacher Alliance event, "Cars of the Future," Oct. 4, 2012, Portage Central HS. For details or RSVP contact Dale Freeland

(dfreeland@portageps.org) or Chris Hoffman (christopher.a.hoffmann@wmich.edu)

- Southwest MI Science Educators Symposium: Nov. 4, 8am-2:30pm, at Portage Northern HS. <https://sites.google.com/a/portageps.org/swmses/>
- Detroit Metro Area Physics Teachers (DMAPT): December 6, Macomb ISD. <http://www.dmapt.org/>
- MSTA 2013 Conference: March 8-9, 2013, Eastern Michigan University, Ypsilanti. Theme: "Pure Science - The Next Generation." For details or to propose a presentation (deadline Oct. 1), visit: <http://www.msta-mich.org/conference-a-events/msta-conference>

These meetings represent only some of the professional teaching conferences scheduled for this coming year. If you are interested in any of these—or know of others that the MIAAPT community should know about—contact anyone on the MIAAPT Executive Board (see our website, <http://www.miaapt.org>).

Can't Get Enough High Energy Physics?

Our Spring 2012 MIAAPT meeting had as its keynote speaker another high-energy physics researcher, Prof. Bernard Pope from Michigan State University (shown in photo below). To view Prof. Pope's slides from his keynote address, click on

the following link (note that it is a large file, ~52 MB).

[Bernard Pope's MIAAPT slides](#)

In addition, for details about the recent announcement of the Higgs boson events detected at CERN, as well as more general information about LHC, CERN, or the ATLAS experiments, follow these links:

[US / LHC](#)
[CERN](#)
[ATLAS](#)
[US / ATLAS](#)





How Do You Fit into This Puzzle?

New Faculty Experience for Two-Year College Physics Faculty

The American Association of Physics Teachers presents an 18-month experience hosted by Delta College that is designed specifically for Two-Year College Physics Faculty in their first five years of teaching.

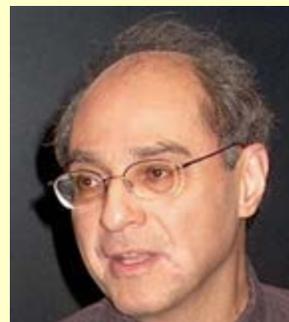
The Experience will equip participants with techniques that are:

- Engaging
- Hands-On
- Proven at Two-Year Colleges
- Based on Physics Education Research
- Designed for Promoting Active Learning

The 18-month Experience will include:

- Two conferences: March 6 - 9, 2013 and July 25 - 27, 2014
- Online Discussion of seminal papers in Physics Education Research
- Mentoring from an experienced TYC Physics Instructors

For more information visit www.AAPT.org/conferences/newfaculty or contact Scott Schultz (PI) sfschult@delta.edu.



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Alex Azima
Lansing Community College



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Michael C. Faleski
Delta College



MI AAPT Liaison to MI State Bd of Ed.
Kathy Mirakovits
Portage Northern High School



3rd Past President
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Allegan HS

Resources for Teachers

Are you starting out as a physics teacher? If so, consider becoming a member of the MIAAPT by attending one of our meetings. For more information, see www.miaapt.org. Below are a series of websites that provide lessons, tips, ideas, news, and demos for class. Clicking on the icons below will take you to the individual sites.





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Door Prize Opportunity - Fall Meeting

At the Fall Meeting of MIAAPT, we will award a door prize for the person producing the best solution to the following challenge problem.

A few rules:

- 1) To receive the door prize, you must be present to win!
- 2) If you wish to send a solution and cannot attend the Fall Meeting... that is fine... we may still feature unique and interesting solutions in the next Newsletter or online.
- 3) The *best solution* (very subjective) wins. If more than one is deemed meritorious, the winner will be chosen by random. Note: Elegance trumps mathematical grinding.

Please send your solution via email to ambroseb@gvsu.edu with Subject line "MIAAPT Door Prize Challenge." Word docs are the preferred format.

Question:

A friend who knows all about your experimental physics expertise hands you fifty gold (50) coins that all *appear* identical except your friend tells you that one is a fake. The counterfeit coin has a *slightly larger* mass than the others.

Using an equal arm balance, what is the fewest number of weighings that you need to conduct in order to guarantee identifying the counterfeit?

High School Physics Competitions 2013

Each year, AAPT runs two physics contests for high school students. These contests are the US Physics Team competition and the PhysicsBowl.

In January of 2013, physics students across the country will compete in the preliminary round to determine the US Physics Team. The first round exam called " $F_{\text{net}} = ma$ " consists of 25 multiple choice questions dealing with mechanics. Students have 75 minutes to answer the questions with the contest generally taking place at the home school. Registration for the exam takes place with AAPT and is due usually during the first week of January.

The top ~350 students on the preliminary round exam move to the semi-finals of the contest which is given at the home school in March. By May, the top 24 students are selected to be members of the US Physics Team. The members take part in a training camp for about 10 days in order to determine the traveling team that in 2013 will be headed to Copenhagen, Denmark!! Click on the link for more information!

The other physics contest runs through AAPT is the PhysicsBowl. This is a one-time 40 question multiple choice exam with a 45 minute time limit. This contest covers all aspects of physics and is broken into two divisions so that students taking a second year of physics compete in one division, while students taking physics for the first time compete in another division.

In addition to the two divisions, there are many geographical regions in which students compete. In this way, there are many prizes awarded to students and schools for outstanding performances. In addition to individual competition, schools compete by having the top five scores added together to create a team score. The top two schools in each region and division also win prizes. The application deadline for the PhysicsBowl is in March.

Click on the following links for more information!:



<http://www.delta.edu/michaelfaleski/PhysicsBowl>