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CPS-AAPT Newsletter

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Spring Meeting at Penn College of Tech

Submitted by Dave Richards, Vice-President, CPS-AAPT

The annual Spring Meeting of the Central Pennsylvania Section of the American Association of Physics Teachers, CPS-AAPT, will be held on Friday, April 7th, and Saturday, April 8th, 2005 at The Pennsylvania College of Technology in Williamsport, PA. The meeting will follow a format similar to that used in previous years, with contributed papers on Friday afternoon and on Saturday morning. A banquet on Friday evening will be preceded by a poster session for students, followed by a keynote address from an invited speaker. A Physics Teaching Resource Agents (PTRA) Workshop on "**Ranking Tasks and TIPERS**" will be held Friday, April 7th, from 8:30 a.m. to 3:00 p.m. The cost of the workshop

will be \$48, payable to CPS-AAPT. Please see the registration form enclosed in the US Postal mailing for more information. Saturday morning will begin with an 8:00 a.m. breakfast, followed by a general business meeting at 8:30 a.m. Invited and contributed talks will follow the general meeting.

Rooms have been reserved at the Fairfield Inn and Suites. These rooms are \$70.00 per night and include a complimentary breakfast (please mention "American Association of Physics Teachers" to receive this discounted price). The hotel is just off of Maynard Street, directly across from Penn College. Please phone (570) 601-9200 to make a reservation, or go to <http://marriott.com/property/propertypage/IPTFI> for more information.

The Spring meeting will include CPS elections for

President, Vice-President, Secretary, Two-Year College Representative, and Treasurer for the coming year. You are welcome to nominate yourself for these positions or to nominate any other CPS member who is *willing to serve*. Please send the nominations via email to Sally Koutsoliotas (see "Officers" to right). Include the nominee's name, affiliation, address (including email), and phone number and the position for which he or she is nominated. Contact the current office holders (listed in the column to the right) if you have questions about any position.

You can find additional lodging information and updates on the CPS-AAPT webpage at: <http://lars.lycoming.edu/cps06/cps06.html>

Pat Callahan Receives AAPT Pre-College Physics Teaching Award

Citation by Jim Nelson, from the December 2005 issue of *The Physics Teacher* (pg 570). Used with permission.

The Excellence in Pre-College Physics Teaching Award was established in 1993 to recognize significant contributions to pre-college physics teaching by an AAPT member for whom teaching is a primary responsibility.



Our own Pat Callahan

Pat Callahan obtained a B.S. in physics and mathematics education from Indiana University of Pennsylvania in 1975, and a master's in science education from Lehigh University in 1979. Education has been a continuing process for Pat as he took his first summer course in 1976 and continues taking courses and workshops to the present day.

Pat began his career teaching physics and physical science for 25 years at Catasauqua High School in Pennsylvania. When Pat accepted his present position as a physics teacher at Delaware Valley Regional High School in Frenchtown, NJ, he introduced the science department to an entirely new ninth-grade science curriculum. Using a grant to fund a summer training program, Pat introduced his fellow teachers to the

world of inquiry-based science. One of Pat's new colleagues recalls, "Pat walked us through all the activities, sharing his wisdom and experience with the topics and possible presentation methods. Pat not only has the knowledge to teach the most able students in advanced placement physics, but also is successful with the non-college-bound students with learning and behavioral challenges." When Pat is invited to do presentations for other teachers, he is recognized as an "AMPLIFIER FOR PHYSICS TEACHING." Pat has distinguished himself as a teacher of teachers and is a source, and a conduit, for other teachers to share ideas with each other. It is as a "Master of Homemade Physics Equipment" that many remember Pat. He uses inexpensive items and creatively turns them into apparatus for physics teaching. Each summer during the AAPT/PTRA Summer Professional Development Institutes preceding the AAPT meeting, Pat presents a session on homemade physics equipment. In my classroom, I personally use several of the devices he has introduced to all the PTRAs. Pat co-authored the book *Homemade Physics Equipment*, which is scheduled to be published by AAPT.

As a PTRAs, Pat is the lead PTRAs for the Philadelphia Urban Initiative, the lead PTRAs for the Central Pennsylvania Rural Initiative, and has authored the PTRAs manual *Teaching About Electromagnet Radiation*. Pat has served AAPT as President and Section Representative of The Southeastern Pennsylvania Section, and as a member of the Physics in High Schools and Physics in Pre-High School Education committees.

Many have recognized Pat's unique ability. As a result he has

received numerous awards and invitations. A few examples include the Distinguished Service Award from the Central Pennsylvania Section of AAPT in 2001, the National AAPT Distinguished Service Award in 2003, consultant, field test teacher, and workshop leader for the Active Physics curriculum, project director for New Jersey Statewide Systemic Initiative Standards Implementation grant, Tandy Technology Teacher Award, Woodrow Wilson Master Teacher, and Mechanical Universe High School Adaptation Trainer. For his many and innovative contributions to the teaching of physics and the professional growth of physics teachers, the American Association of Physics Teachers honors Patrick T. Callahan with the Excellence in Pre-College Physics Teaching Award for 2005.²

REFERENCES

- [Citation links](#) [e.g., Phys. Rev. D 40, 2172 (1989)] go to online journal abstracts. Other links (see [Reference Information](#)) are available with your current login. Navigation of links may be more efficient using a [second browser window](#).
- [Auxiliary Material \(EPAPS\)](#) See EPAPS Document No. E-PHTEAH-43-009509 (<http://ftp.aip.org/cgi-bin/epaps?ID=E-PHTEAH-43-009509>) to read Pat Callahan's award speech, entitled "Things I've Learned Along the Road." For more information on EPAPS, see <http://www.aip.org/pubservs/epaps.html>. [\[EPAPS\] first citation in article](#)

"Pat has distinguished himself as a teacher of teachers and is a source, and a conduit, for other teachers to share ideas with each other."

Moravian College Equipment Loan Program

-submitted by Kelly Kriebel, Moravian College

The science departments of Moravian College have recently received a grant from Research Corporation from which eight Ocean Optics USB spectrometers were purchased to be used in an equipment loan program by local (Lehigh Valley Area) high schools in their science classes.

The equipment includes eight spectrometers, each one connected to a laptop computer. The spectrometers can be used to study emission spectra and flame tests, as well as absorption or transmission spectra through filters, fluids, and solutions. Software on the computers is easy to use, and Moravian College science staff will demonstrate how to use the equipment to students and teachers at the high school. The eight spectrometers are loaned to high schools, usually for a week at a time, subject to scheduling and availability. Teachers participating in this program are encouraged to develop their own lessons and make them available on the equipment loan web site and share them at the summer workshop. In addition, for participating public funded schools, the program is also involved with the Math Science Partnership of Greater Philadelphia.

The web site outlining this program is at <http://www.cs.moravian.edu/~specloan/>

“The program is an excellent way to encourage the study of science, and provide outreach for colleges to local area high schools.”

If you are interested, or know of someone at your school who would like to participate, please have them contact: Kelly Kriebel (kriebek@moravian.edu or 601-861-1437).

Schools that have participated thus far:

- Bethlehem Catholic
- Freedom
- Liberty
- Wilson
- Emmaus
- Dieruff
- Central Catholic
- Moravian Academy

Quick and Simple Demonstration on Torque, Static Equilibrium, and Center of Gravity

-submitted by Dave Richards, Penn College of Technology

Take two pieces of wood and connect them with a simple hinge. In one of the boards, drill two small holes about 2.5 cm apart near the end (Figure 1). Run a piece of string through the two holes and tie the two ends together on the back.

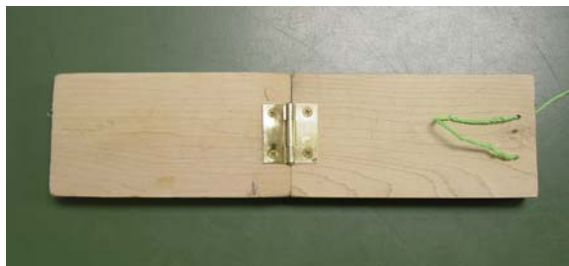


Figure 1

Before you begin the subject of torque and static equilibrium, ask your students, “Is there is anything that can be hung from the string that would keep the one half of the board from falling?” Hold up the other half of the board while asking this question (Figure 2). Let them discuss the question in small groups.



Figure 2

Continued on page 4

Statics Demonstration (Continued from page 3)

As the students discuss the question, work the wooden end of a hammer into the string so that the head of the hammer is positioned to the left of the hinge. Hold the hinged board up and push on the half that has the hammer hanging from it and release it. The board will move up until it is level again. (See Figures 3 and 4) Have the students come up with an explanation of why they think this happens.

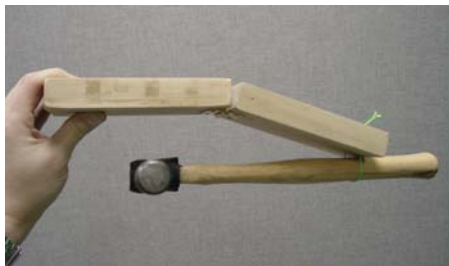


Figure 3

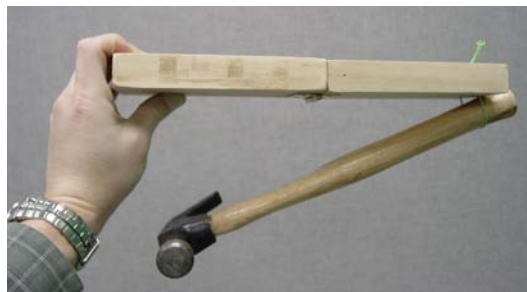


Figure 4



CPS-AAPT

From the CPS-AAPT Constitution...

The objectives of the Central PA Section of the American Association of Physics Teachers (CPS-AAPT) are:

- the advancement of the teaching of physics in the colleges and universities of Central Pennsylvania and environs,
- the promotion of a professional spirit and acquaintanceship among the members of the Section, and
- the encouragement of instruction in physics in the secondary schools of the region served by the Section.

UPCOMING EVENTS:

- **CPS-AAPT Spring Meeting: April 7-8, 2006 at The Pennsylvania College of Technology in Williamsport, PA**
- **Society of Physics Students (SPS)– Zone 3 (PA, NJ, DE) meeting: February 25, 2006 at Drew University in Madison, NJ**
- **AAPT Meetings**
 - **Winter 2006 meeting: January 21-25, in Anchorage, AK**
 - **Summer 2006 meeting: July 22-26, at Syracuse University, Syracuse, NY**

Newsletter compiled by Jim Borgardt. Please direct all comments and submissions to borgardt@juniata.edu.

<http://lars.lycoming.edu/cps06/>