Message from the President

As the president of the Illinois Association of Physics Teachers I wish to extend warm greetings to each and every one of you. Please allow me to share a little information about myself. While in high school my parents strongly encouraged me to take physics. They argued that I needed to take it because of my keen interest and wonderment in how things worked. I ended up completing a degree in physics from Western Illinois University. With a little more than a year left before the completion of my degree I asked my advisor what does some one do with a degree in physics. His off the cuff response was either to attend graduate school or perhaps become a high school physics teacher. The next semester I began taking the necessary education courses to allow me to become a high school physics teacher. With both a degree and physics /math certification in hand I began looking for employment.

In 1985 I began my teaching career as a math teacher at Edison Junior High in Rock Island, in 1988 I was transferred to Rock Island High School. Besides teaching several sections of Physics, I was also assigned a couple of pre-algebra math courses. Chuck Armstrong was also at Rock Island High School at this time and would continue teaching both Physics and Chemistry until his retirement several years later. Chuck introduced me to the ISAAPT by securing funds and permission that allowed us to attend the Spring meeting at Parkland College in 1989. I can not recall many details about the theme of the meeting or share anything about any of the presentations or talks I heard. I do remember though that I enjoyed a delicious banquet that served prime rib. I also know that the people I met were friendly and interested in the betterment of teaching physics at all levels.

Since that first meeting fourteen years ago, I have had the opportunity to attend a number of our state meetings, two national meetings, and I have even participated in several NSF funded workshops in various parts of the country. Of all the science disciplines, I truly believe that we physicists are probably the most organized and well-connected group of educators. These opportunities for fellowship have truly made a difference not only to me but also to the students that I daily come in contact with. Like many high school teachers, I have become isolated since Chuck’s retirement almost ten years ago, as I do not come into casual contact with other physicists on a daily basis.

Continued on page 2
Message from the President (continued)

I look forward to going to Knox College in Galesburg on April 11-12. It will be an opportunity to see old friends and to participate in an exchange of new ideas that I can share with my students. I encourage you to attend this meeting, to invite and bring along another physics teacher along, as all will be welcome. We still are a very friendly group. This meeting's theme “Applications of Physics” should provide some answers to the student’s chant of “Why do we need to know this.” I also encourage you to not be shy, but to share through your participation by presenting a paper or at least a “Take Five”. Many of my student’s favorite activities are the result of someone saying “I do this and the kids love it and even better yet they understand...”

Gary Wolber
ISAAPT President
Rock Island High School

FUTURE ISAAPT MEETINGS

• Spring 2003 – April 11,12 - Knox College, Galesburg
• Fall 2003 – October 10,11 - Illinois State University
• Spring 2004-University of Illinois, Urbana
• Fall 2004 – Bradley University, Peoria
• Spring 2005 – Southern Illinois University at Edwardsville
• Riverside-Brookfield High School, Riverside

CPDU's AVAILABLE AT SPRING ISAAPT WORKSHOPS

Continuing Professional Development Units (CPDU's) will be available to in-service high school physics teachers who attend and participate in the workshops at this spring's ISAAPT meeting at Knox College. Carl Wenning of Illinois State University has registered ISAAPT with the Illinois State Board of Education as an official service provider. For additional details about the availability of these CPDU's, keep an eye on the ISAAPT web site http://isaapt.org

NOMINATIONS FOR OUTSTANDING HIGH SCHOOL PHYSICS TEACHER SOUGHT

Each school year the Illinois Section of AAPT is pleased to receive nominations for the ISAAPT Outstanding High School Physics Teacher Award. Fellow teachers and school administrators are encouraged to nominate Illinois physics teachers with exceptional performance and enthusiastic student response.

Nominate an Illinois physics teacher on the ISAAPT Website. isaapt.org

The teacher who is selected will be notified and presented with the award at the spring 2003 meeting of the Section. Guidelines for this award were presented to the Council and are available from the Chairman of the committee listed above. For further assistance contact Diana Roth by e-mail: droth@springfield.k12.il.us

Spring 2003
ISAAPT
Newsletter
Illinois Section
of the
American Association of Physics Teachers

Roger Reeves, Editor
Hillsboro High School
522 East Tremont
Hillsboro, IL 62049
reeves@consolidated.net

For address changes, membership information and other correspondence about the ISAAPT, contact:

Carl Wenning
Secretary Treasurer ISAAPT
Illinois State University
4560 Physics Department
Normal, IL 61790-4560
wenning@entropy.phy.ilstu.edu
Ralph Miller Receives Distinguished Service Award at Fall Meeting

A special highlight of the Friday banquet at the Fall meeting at Millikin was the presentation of the Distinguished Service Award to Ralph Miller, Physics Professor Emeritus at Greenville College. In the 1960’s, Professor Miller teamed up with leading physics instructors across the state to increase physics enrollments. As a result of their work, an NSF grant was awarded to study and improve physics education in the state. The ISAAPT was involved with the grant and grew into an effective force for physics in the state. It was particularly fitting this year that the Distinguished Service Award should go to one of the outstanding pioneers in physics education.

CALL FOR NOMINATIONS

Nominations are being sought for ISAAPT’s Distinguished Service Citation. The distinguished service citation recognizes outstanding contributions to the field of physics teaching in the state of Illinois. Special recognition is given in the areas of:

* leadership of colleagues and students through physics teaching
* professional contributions to section activities through contributed papers, workshop presentation, committee service, or elective office
* distinguished service at the teacher's home institution.

Association members are encouraged to nominate those who they feel are worthy of recognition. For complete details and information about nominating a colleague, visit the ISAAPT web site: http://isaapt.org

PAPERS AND PRESENTERS AT THE FALL MEETING AT MILLIKIN UNIVERSITY

Invited Talks

Recent Advances in Observational Astronomy, Jim Kaler, Astronomy Department, University of Illinois, Urbana, Friday evening banquet speaker

Physics Teaching Requirements in Illinois, Panelists!: Carl Wenning, Duane Ingram, David Sykes, Clifford Parker and Diana Roth.! Moderator!: Ray Boehmer.

Just-In-Time Teaching to 600 Students, Mats Selen, Physics Department, University of Illinois, Urbana

Progress in Material Science, Ian Robertson, Department of Material Science and Engineering, University of Illinois, Urbana

Contributed Papers

An Astroimaging Project at the Governor's School. Keith Andrew, Eastern Illinois University, Charleston, IL 61920 and Robert L. Fenstermacher, Drew University, Madison, NJ 07940

The UIUC Physics Van Outreach Program. Mats Selen, University of Illinois at Urbana Champaign, Urbana, IL 61801


Professional Development Opportunities at ISU Summer 2003. Carl J. Wenning, Department of Physics, Illinois State University , Normal, IL 61790-4560.

Magnetostriction, Magnetoelastic, and Hysteresis Measurements on Heat-Treated Steels. Jason T. Orris, Ryan Gordon, Chris Jurs and Mark S. Boley, Physics Department, Western Illinois University, Macomb, IL 61455.


Use of the Magnetic Force Microscope (MFM) for Domain Wall Imaging in Magnetoelastic Torque Sensors. Jason Wilson, Doug Franklin and Mark S.
Boley, Department of Physics, Western Illinois University, Macomb, IL 61455.

*Shadows in Science and the Visual Arts.* Christopher Chiaverina

Assessing the Impact of University-Sponsored Science Outreach Programs. Laurie Pichla and James Rabchuk, Western Illinois University, Macomb, IL 61455.

*Modeling Magnetic Fields with FEMM 3.1.* James C. Gumbart and James Rabchuk. Western Illinois University, Macomb, IL 61455

*The MoNA Project.* James Brown, Millikin University, Decatur, IL 62522.

Modelus Revisited? Leonard Weisenthal, Lewis University, Romeoville, IL 60466.


*Organizing Physics Students.* Ann Brandon and Deborah Lojkutz, Joliet West High School, Joliet, IL 60435.

*Teaching a Better Mechanics Course - we can do better.* Tom Foster and Kimberly Shaw, Southern Illinois University Edwardsville, Edwardsville, IL 62026.

Evaluating "Interactive Examples" in Introductory College Physics. Adam Feil, University of Illinois at Urbana Champaign, Urbana, IL 61801.

*Honors Astronomy: People of Courage.* Benjamin Brown, Principia College, Elsah, IL 62028.


**WORKSHOPS**

*PTRA Rural Institute - Microcomputer Labs: LabPro and LoggerPro* Bernard Ricca, DePaul University School of Education - Barat Campus, Tom Holbrook, University High School, Illinois State University and Carl Wenning (facilitator), Illinois State University

*A Web-based Prep Course for Calculus Physics* Gary Gladding, University of Illinois, Urbana.

**THREE SUMMER HIGH SCHOOL PHYSICS TEACHER WORKSHOPS TO BE PRESENTED AT ILLINOIS STATE UNIVERSITY**

*Problem-Based Learning for Teachers of Science Workshop*

June 9 - 13, 2003

Real change in the practice of in-service teachers requires a sustained effort in professional development in which master teachers demonstrate new and effective ways of teaching, allow the teachers to try the new methods, and then help them to improve their practice. This workshop will show in-service teachers how to employ student-centered, inquiry-oriented, constructivist teaching practices using the techniques of Problem-Based Learning (PBL). PBL makes the classroom as real as possible for students by bringing in true-to-life problems for students to solve. Its authentic curriculum motivates students to solve engaging problems, learning science as they do so. Teachers become facilitators of learning, and not authority figures of science. For many children, exposure to traditional methods of science teaching results not in understandings, but in alienation from science. PBL can change all of this and benefit students in additional important ways. The ability of science teachers to incorporate intellectual and social skills in their teaching through PBL pedagogy will greatly influence students' success in school, in the workplace and in the community. In this workshop, teachers, taking on the role of students, will expand their content knowledge through the use of human and technological resources, apply newly acquired information, intellectual processes, and social skills to solve real-life problems. They will complete two PBL exercises: *The Deer Problem* and *When Lightning Strikes.* They will then work in small cooperative groups to create and present their own PBL's to peers. Twenty-four middle and high school science teachers will participate in five (5) full days of residential workshop training on the campus of Illinois State University from June 17-21, 2003. The workshop will consist of 30 contact hours of classroom time, plus additional homework time. CPDU’s and free CEU’s will be available for this workshop.
Modeling Method of Instruction for Physical Science Workshop
June 16 - 27, 2003

Secondary-level physical science teachers will participate in ten (10) days of workshop training and three (3) full days of follow-up training that deals with the Modeling Method of instruction. The Modeling Method of instruction has been shown to be a highly effective extension of the traditional 3-step learning cycle (observe, generalize, apply). The modeling cycle addresses the deficiencies of the learning cycle by assisting students to construct understanding from observations, by confronting student preconceptions, by examining student thought processes through the process of "white boarding" (a procedure whereby students create and present multiple representations of a physical phenomenon on 24"x32" dry erase boards), and Socratic questioning. The goal of this Modeling Method of Instruction for Physical Science project is to provide a meaningful form of professional development for in-service teachers who are inadequately prepared to teach physical science using student-centered, inquiry-based, constructivist practices identified through educational research. Real change in instructional practice will come about only when master teachers demonstrate new ways of teaching, allow less experienced teachers to practice the new method, and then help them to improve their efforts. This workshop will do just that. The principles learned here can be readily transferred to any other sort of classroom instruction. Resources for implementation of Modeling Method in physical science (integrating science, math, and technology) classroom will be provided through this grant and by support form the participant's school district. Participants will receive a Modeling Method Handbook, 10 white boards, 10 dry erase marker sets, and perhaps additional materials. The workshop will consist of 60 hours of lab time, and 18 hours of follow-up during the school year. This workshop will be a residential program on the campus of Illinois State University. CPDU's and free graduate-level CEU's will be available for this workshop.

PTRA Rural Institute
July 7-11, 2003

The Physics Teaching Resource Agent (PTRA) Project is a professional development program for rural teachers of physics and physical science within the State of Illinois. It is a program consisting of peer instruction: teachers teaching teachers. The American Association of Physics Teachers (AAPT) maintain a nationwide cadre of 200+ selected, accomplished teacher-leaders who conduct hundreds of workshops each year for teachers in their local areas and who are undated (and energized!) each summer. Over the past nine years AAPT has commissioned some 40 "hands-on, minds-on" inquiry-based workshops. The immediate objective of the PTRA Rural Institute Program is to provide a start on a program minimum of 130 contact hours of instruction over a multi-year period: 30 hours per summer plus 12 additional hours per academic year. The long-term goal of the Project is for PTRA leaders to emerge from within the ISU rural center to establish a program that can be continuing and self-sustaining. CPDU's will be available for this workshop. Students may register for graduate level Independent Study credit (PHY 400). No tuition waivers are available for this project.

Complete details about all of these workshops may be found on the ISU Physics Department web site at http://www.phy.ilstu.edu/workshops/. A teacher application form, school commitment forms (for first Eisenhower grants), and critical additional information may also be found on this page. For desired information not found on this web page, please contact Carl Wenning via e-mail at wenning@phy.ilstu.edu or by phone at (309) 438-2957.

ISAAAPT WEB SITE

For the latest information about the ISAAAPT and other kindred topics, check the Website: http://isaaapt.org Dave Renneke manages the site and is constantly updating and improving this information source. If you couldn’t make the Fall meeting, check out the particulars!via the!Internet!
ISAAPT GUIDEBOOK PROGRAM

By action of the Executive Council on April 15, 2000, the ISAAPT Guidebook Program was renewed until the spring of 2003, at which time the program will again be reviewed. Physics teacher education program coordinators may request an AAPT guidebook for qualifying students. Students eligible to receive a guidebook under this program are those who are:

- enrolled in a physics or science "methods" course,
- soon to be engaged in student teaching,
- physics teacher education majors, and
- enrolled in a post-secondary institution within the ISAAPT zone.

The ISAAPT Guidebook Program will provide one resource guidebook from the AAPT to each qualifying student as requested. The guidebook selection is currently restricted to the following guidebooks: String and Sticky Tape Experiments, A Potpourri of Physics Teaching Ideas, and A Demonstration Handbook for Physics. Physics Teacher Education program coordinators may request one guidebook for each of their students who qualify; students may not request books themselves. Program coordinators who wish for their qualifying students to benefit from this program should contact the ISAAPT Secretary to place requests.

PHYSICS DAY AT GREAT AMERICA

Physics Day at Great America will be May 7 and 8. The Vernier Vest loan program will be running again.

If you have not received a mailing, contact Kris Ellsworth, Six Flags Great America, 542 North Route 21, P.O.Box 1776, Gurnee, IL 60031

General information can be obtained at the following address:
http://www.sixflags.com/greatamerica/events/

PHYSICS DAY AT SIX FLAGS
ST. LOUIS, APRIL 25

On Friday April 26, Six Flags St. Louis will be open exclusively for physics, math, and science students. Call 636-938-5300 for ticket information and accompanying lab manuals.

JOURNAL OF PHYSICS TEACHER EDUCATION ONLINE

Journal of Physics Teacher Education Online is dedicated to investigating and documenting significant issues and challenges in the education of physics teacher candidates. With a focus on the scholarship of teaching, the journal seeks to generate discussion and promulgate sustainable, long-term changes in educational research, policy and practice. Journal articles will foster deep, significant, lasting learning for physics teacher educators and improve their ability to develop teacher candidates’ and inservice teachers’ understanding, skills, and dispositions. The latest quarterly issue is now available for download as a 612kB PDF from http://www.phy.ilstu.edu/jpteo/. This quarter’s issue contains the following articles: Seeing is Believing: Classroom Demonstrations as Scientific Inquiry, by Jerod L. Gross; A Multiple Case Study of Novice and Expert Problem Solving in Kinematics with Implications for Physics Teacher Preparation, by Carl J. Wenning; and Pre Student Teaching Clinical Experience Guidelines for Physics Teacher Candidates at Illinois State University, also by Carl Wenning.

HIGH SCHOOL PHOTO CONTEST

The contest is open to all high school students. Photos must be unmounted, 8" x 10", and may be either black and white or color. Photos must be taken by the student. The photo must be accompanied by a typed paragraph(s) describing the physics in the photo. The paragraph(s) should have a title and be less than 250 words. This explanation may be submitted typewritten or on disk (PC format: MS Word or WordPerfect). Photos must be accompanied by the following information which must be typed and may be on the sheet with the explanation or on a separate sheet: student's name, home address, high school, school address, school phone number, and teacher's name.

There are two categories: Natural and Contrived. Vernier Software and Technology has contributed prizes for first place, second place, third place, and honorable mention, as well as prizes for the teachers of winning students. Photo submissions should be sent to: Mary M. Winn, 2623 Watrous Ave., Tampa, FL 33629. The photographs will be displayed and judged at that year's Summer Meeting. Winning photos will be added to the AAPT website, http://www.aapt.org, and may be published in AAPT publications. Photos must be received by June 1, 2003.
Applications of Physics

ISAAPT Spring Meeting

April 11-12, 2003
Knox College
Galesburg, Illinois

http://isaapt.org

Invited Papers

Nanobiology and Nanophysics, Robert Austin

40 years of Physics Research at General Motors, George W. Smith

Mossbauer Spectroscopy for the Physical Characterization of Solids, Jon Spijkerman

Workshops

W1. Teaching Buoyancy and Optics Using Inquiry, Carl Wenning

W2. Junk Box Wars, Christopher LaRoche

W3. Tycho: Enhancing Your Course with Web Technology, Tim Stelzer

W4. Simple Experiment in Physics, Thomas Kuhn of PASCO

Further information including abstracts of the talks, workshop details, Online Call for Papers, and Online Registration may be found at the ISAAPT Web site

isaapt.org <http://isaapt.org/>

Members: If you have been thinking about submitting a contributed paper or planning to do a Take-Five, please send in the information using the online forms no later then Friday, April 4.