AAPT PHYSICS EDUCATION

Section News

December 2011

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Alberta Section

Wednesday, March 2, 2011 at 5:30 p.m. at the Physics Department of the University of Alberta.
Approximately 19 in attendance.
Program: *Ghosts in the Ice* (Dr. Darren Grant)
Wednesday, October 12, 2011 at 5:30 p.m. at the Physics Department, of the University of Alberta
Approximately 28 in attendance.
Program: Elections to Executive Committee
Talk: Different Ways of Presenting Evidence for Modern Physics Experiments such as e/m Tour of new Physics Building.
Physics Teachers Day: Friday December 9, 2011 at the Physics Department of the University of Alberta.
Approximately 60 in attendance.
Program: Beth Cunningham skyped in at the beginning of the day.

Our speakers included Darlene Fitzner (The Particle Zoo and, Alice and Bob in Wonderland Visit Alberta), Dr. Darren Grant (Ghosts in the Ice), Dr. Sharon Morsink (Gravitational Lensing and Black Holes) and Dr. Frank Hegman (Ultrafast Lasers: Observing Nature in a trillionth of a second). The day concluded with Dr. Roger Moore presenting a joint colloquium (CERN, The Search for the Higgs Boson, and the Problem of the Neutrino 'Faster Than Light Velocities'). http://abphysicsteachers.wordpress.com/

—Terry Singleton, Section Representative

Arizona Section

The Arizona section of the AAPT met on Saturday, September 24, 2011 at Estrella Mountain Community College (EMCC), hosted by EMCC physics faculty Dwain Desbien and Angela McClure. EMCC is in Goodyear, a suburb just west of Phoenix. It was an engaging, well-rounded meeting, with much interaction among the 18 participants–worth every minute.
The next meeting is Saturday, March 24, 2012 at Northern Arizona University.
Officers elected at the business meeting (terms start immediately after the meeting):
President: Angela McClure, Estrella Mountain Community College
Vice-President - Ann Hammersly, Scottsdale Unified School District
Secretary/Treasurer - Buzz Delinger, Northern Arizona University
High school representative - Ryan Hill, Scottsdale Unified School District
2-year college - John Griffiths, Mesa Community College
4-year college/university - Bob Culbertson, Arizona State University
Section Representative – Jane Jackson, Arizona State University
Half-hour presentations in the morning:
1) Jane Jackson (ASU): ASU's preparation of high school physics teachers. Jane introduced the new publication by David Hestenes et al: A Graduate Program for High School Physics & Physical Science Teachers, Am. J. Phys.79: 971-979 (Sept. 2011). At http://modeling.asu.edu/R&E/Hestenes ASUgrad AJP11.pdf

She noted that by 2001, half of Arizona's physics teachers had had significant professional development through Modeling Instruction, due to grants such as ESEA Title II Eisenhower and AZ Community Foundation. In 2010, the Milken Institute claimed that AZ rose to 6th nationwide in recent per capita science and engineering bachelors degrees. (http://www.milkeninstitute.org/tech/tech2010.taf?sub=hcic) This agrees with research indicating that students who have an interactive engagement high school physics course are much more likely to get a degree in STEM subjects. http://modeling.asu.edu/modeling/STEMpathways-Physics.htm

Arizona has about 280 physics teachers; two-thirds are in metropolitan Phoenix. Only 20% of high school students take physics: ~5% of urban public school students, and up to 50% of high school students in upper middle class neighborhoods. In excelling charter high schools (Great Hearts Academies, AZ School for the Arts, BASIS Schools), all students take up to two years of physics, but in many poor-achieving charter schools physics is not offered.
2) Rob Purington (2nd career physics teacher at Benson Union HS in rural AZ): Public Perception of Scientists. Students rarely see a scientist at work, compared to seeing other careers in action. They, and the public, think scientists are strange. The public distrust humans' ability to use knowledge wisely, are ambivalent about change, are reluctant to widen their thinking. Science threatens beliefs and "knowingness." What can a science teacher do about this? "It comes down to optimism. We must show that science is to be used for good, for benefit."
3) Bob Culbertson (ASU): Overview of Teaching Foundations Project (TFP) science courses.

TFP is part of a $38,000,000 grant from the U.S.

Department of Education to the ASU College of Education. The grant has 5 consortia: arts, social studies, math, science, English language arts; each is led by an ASU and a community college faculty; and each uses a rubric to guide course reform. Elementary education majors at ASU will be required to take THREE science courses (up from 2); courses must include a life science, an Earth/space science, and a physical science - PLUS a sustainability course. Each science course within TFP is a quantitative (called SQ) course for 4 semester hours and in-person (as opposed to online). The 8 new science courses are Physical Universe (developed by Suzi Shoemaker), Environmental Chemistry (Lorelei Wood), Music in Motion (Bob Culbertson with Ann Hammersly and Chuck Weeks), Intro to Environmental Science, Physical Geography, Biology 100 (Roseanne Magarelli), Organisms and Their Environment, Anatomy & Physiology. Each course has an energy theme, a sustainability theme, and an integrated lab (& small class size). Professional development is required for prospective instructors. Courses were approved by science ed faculty at Columbia University.

4) John Griffith (Mesa Community College): A Place for Games in the Physics Classroom. We played and discussed the "SciGame Gamma" game at http://users.ipfw.edu/maloney/game_of_science.htm. It was great fun! After teams of three people played the game, John led a board meeting (circle whiteboarding, modeling discourse management). He was outside the circle; and he began by tossing a very soft ball (Nerf ball) to someone, and saying that that person was to begin the discussion – and then toss the ball to another person, who had to speak. It was effective! He said that this activity is ideal for the first day of class in any level of physics or astronomy course. His "rules of the whiteboard circle" are at http://modeling.asu.edu/modeling/Rules-WBcircle.doc

Afternoon workshops (consecutive).

1) Brett van de Sande (ASU): Effective help-giving strategies for homework problems (Andes). Andes (http://www.andestutor.org) is an intelligent homework system for introductory physics in which students include all problem solving steps as they solve quantitative physics problems. Its 500 problems cover most topics in high school and university general physics. "We recently developed a new version of Andes that runs in students' web browser. You can try it out at http://www.andestutor.org/sets, he wrote."

2) David Weaver (Chandler-Gilbert CC): Multi-modal problem solving (building scientific models using graphical analysis, Excel, algebra, and VPython).

His handouts are at http://sites.google.com/site/azaapt/meetings/past-meetings/fall-2011

This is related to Spiral Physics of Paul D'Alessandris, and to an article on graphical methods by Dwain Desbien (http://modeling.asu.edu/modeling/DesbienDwain_graphsTPT08.pdf)

3) Dwain Desbien (our host): High speed video in physics class. Dwain introduced his TPT article (Sept. 2011 issue). Use a Casio EXILIM camera, $200-$300, can do up to 1000 fps; ideally use about 240 fps. Work in natural light or else you will see fluorescent flicker. It can be done with one camera if you have all students make videos with the teacher holding the camera, download to 1 computer, students bring memory sticks to that computer, then take the stick to their computers for analysis. (Logger Pro 3.8.2 or higher can do different frame rates easily.) Even if frames are dropped, the time stamp is done correctly! Go to Movie Options to set the frame rate. Handouts are at http://sites.google.com/site/azaapt/meetings/past-meetings/fall-2011

—Jane Jackson, Section Representative

Arkansas-Oklahoma-Kansas Section

Building Scientific Literacy in a Modern World was the theme for the October 14-15, annual AOK-AAPT meeting held on the beautiful campus of Northwest Arkansas Community College in Bentonville, Arkansas. Hosting the event was C. Dianne Phillips, EMPACTS Facilitator/Faculty Trainer from NWACC.

The registration and Friday afternoon activities included tours of the University of Arkansas Physics Laboratories at the neighboring University of Arkansas. These tours were given by the following researchers and the topics of their research areas are included. Dr. William Olivers, *Materials Under Extreme Conditions;* Dr. Surendra Singh, *Optics and Lasers*; Dr. Gregory J. Salamo, *Nanoscience Technology*; Dr. Paul Thibado, *STM of Graphene in Physics*; Dr. Min Xiao, *Quantum and Nonlinear Optics*; Dr. Eitan Gross, *Neural Computation Lab;* and Dr. Jak Tchakhalian *Artificial Quantum Materials*.

The Laboratory tours were followed by a physics colloquium at University of Arkansas titled *First-Principles Studies of Out of-Equilibrium Charge Dynamics and Rectification at Nanoscale Interfaces*. This special talk was given by Pierre Darancet of the Lawrence Berkeley National Lab who was visiting U of A. After a busy and interesting afternoon members of the AOK Section returned to Bentonville where the afternoon activities were followed by a social hour back on the NWACC campus at Shewmaker Center. This is where the annual AOK Physics teacher's banquet was held. The banquet speaker was The University of Arkansas's Dr. Gay Stewart, current AAPT Vice President. The theme of her presentation was "Physics Education and Building Positive Dispositions" Chef Lou Rice created the meal for the banquet which was enjoyed by all.

Nearly 30 people were in attendance at the Saturday morning and afternoon activities. As usual fine breakfast snacks were available and an excellent lunch was prepared by Chef Lou and the staff at the Shewmaker Center. Lunch

was provided by NWACC with the luncheon speaker being Art Hobson Professor Emeritus of Physics, University of Arkansas, Fayetteville. Dr. Hobson discussed various ideas from his Liberal Arts Physics Textbook *Physics: Concepts & Connections* including focusing in on the topic *Strategies for building Scientific Literacy*.

The activities throughout the day included talks by members of the AOK section. A brief summary of the morning talks are listed below.

- New Faculty Experience for Two-Year College Physics Instructors Dr. Todd Leif Cloud County CC
- Revitalizing College Physics at UALR Dr. Al Adams University of Arkansas Little Rock
- Physicists and Scientists on TV… is THAT really us? Dr. Karen Williams East Central University
- Teaching Diversity and the Nature of Science Network in an EMPACTS Astronomy Classroom. Dr. D.L. Androes Northwest Arkansas CC
- EMPACTS: Educationally Managed Project-based Advancing Curriculum, Technology, and Service. Marvin Galloway Northwest Arkansas CC

This was followed by a Round Table Activity/Discussion by C. Dianne Phillips, "How do we increase critical thinking skill in our students?"

Additionally, the morning session was concluded with a poster session while lunch was being brought in. Three poster presentations were viewed. They were authored by and titled, the following:

Student Opinions on a Blended Astronomy Course. Dr. Carl Rutledge East Central University, Ada OK

Development, Implementation and Assessment of Ultrasound Physics Laboratory Course. Dr. Karen Williams, Rutledge East Central University, Ada OK

Curriculum centered, project based learning in the sciences. C. Dianne Phillips, EMPACTS, North West Arkansas CC

Additional activities throughout the day included talks by these members of the AOK section.

A brief summary of the afternoon talks *Using Technology to enhance Learning in the Classroom and Laboratory Session* are listed below.

- Using an Open Source Programmable Microcontroller to Visualize Chaos. Dr. Juan Serna University of Arkansas, Monticello.
- Laboratory measurements for our Life Science students. Dr. Al Adams University of Arkansas, Little Rock
- Creative Leaning of Physics Dr. Michael Zelin North West Arkansas Community College Applications of the Vernier Power Amplifier Dr. Al Adams University of Arkansas, Little Rock
- Using the Xbox Kinect Sensor for Physics Experimentation, Dr. Jorge Ballester, Emporia State University, Emporia, Kansas
- Creating screencasts is Easy and Can be a Vital Resource, Dr. Steve Maier, North West Oklahoma State University

Following the presentations the AOK Section had their annual business meeting. Section Representative Todd Leif conducted the meeting in President Dr. Sytil K. Murphy absence, who has moved on from a post-doctoral research position at Kansas State University to Shepherd University. The meeting basically included the election of new officers for the upcoming year as well as verification of future meeting sites and hosts. The following people were elected via a uncontested ballot and will serve their terms accordingly. The list of these officers is shown below. Next year's meeting will be held at Dr. Steve Maier North West Oklahoma State University facilities sometime in the fall. Additionally, Anne Gillas and Danny Mattern have agreed to host the following meeting Fall 2013 at Butler Community College in El Dorado, Kansas

—Todd R. Leif, Section Representative

British Colombia Section

Annual Report from the BC AAPT Section
By BC Section Representative – Marina Milner-Bolotin
December 6, 2011

BC Section of the AAPT has a very exciting year of 2011. During the year we organized a very successful Annual Meeting (May 2011) at UBC Okanagan in Kelowna. We also organized a special visit by AAPT President, Prof. David Sokoloff (February 2011) who presented two lectures, one at the University of British Columbia (UBC) and one at Simon Fraser University, met with graduate students and faculty members and then conducted an interactive teacher workshop at the renovated physics teaching labs at UBC on another day. In March 2011, more than 400 BC physics students arrived to UBC to take part in 2011 Physics Olympics. BC AAPT members were part of the organizing committee for this very successful event. In May of 2011, we helped to organize the BC Brightest Minds Physics competition that attracted more than 40 high school teams from all over BC to Vancouver largest amusement park – PNE (Pacific National Exhibit). BCAPT members helped to design the challenges for the event, as well as conduct the event. In October 2011, we took an active part in Catalyst 2011 Conference – a bi-annual conference for BC science teachers organized by BC Science Teachers Association (BCScTA). The physics stream of the conference has the greatest number of presentations (8) and they were very well attended. The presentations attracted not only physics but also science teachers, which also allowed us to recruit 33 new BCAPT members. The BCAPT membership fees for the new recruits have been paid by the BCScTA, which we greatly appreciate. In addition, during the conference we were able

to display AAPT promotional materials and advertise the events organized by the AAPT – such as National meetings, workshops, etc.

BCAPT members helped to organize very successful outreach events at Simon Fraser University. Some of these events targeted girls while others were family oriented events. These events were very successful and we hope they will continue next year. We are also working on collaborating with the Perimeter Institute to organize professional development opportunities for BC physics teachers.

In addition, our members were honoured with multiple teaching awards and recognitions, including the Canadian Association of Physicists High School Teaching Award (Peter Vogel), AAPT Distinguished Service Citations (Peter Hopkinson). Many of our members participated in the professional development events far outside of the province: The Perimeter Institute summer school, CERN summer school for physics teachers and many others.

During the year, we maintained an active web site: www.bcapt.ca and a very active listserve. In addition, our Executive Board piloted Skype meetings, which simplified our communications and made it more efficient. We had a very successful 2011 year and we are looking for an exciting year of physics in 2012.

—Marina Milner-Bolotin, Section Representative

Central Pennsylvania Section

The 59th Annual Conference of the American Association of Physics Teachers, Central Pennsylvania Section (AAPT-CPS) was held Friday the 11th and Saturday the 12th of March 2011 at Penn State Schuylkill. Dr. Mike Gallis, from Penn State Schuylkill, was responsible for organizing the conference. Approximately 40 attended.

There was an all day workshop on Friday run by the Physics Teachers Resource Agents (PRTA) for physics teachers (16 attendees). The workshop, entitled *Using Engineering to Teach Physics Concepts*, provided an opportunity to share ideas for using engineering projects to learn basic Physics concepts. Dave McCachren of Indian Valley High School in Lewistown, PA and Pat Callahan of Delaware Valley Regional High School in Frenchtown, NJ conducted the workshop.

The poster session was held Friday afternoon followed by the conference reception and banquet at the Hidden Streams Café of Penn State Schuylkill. After the banquet dinner, Dr. Stephen Couch, Director of Academic Affairs of Penn State Schuylkill, gave a welcoming address. The public keynote address was held in the Morgan Auditorium at Penn State Mont Alto. The address, From Scopes to Kitzmiller: The Legal Battle Regarding Teaching Evolution in Public Schools, was presented The Honorable Judge John E. Jones III, perhaps best known for his landmark ruling in the intelligent design case, Kitzmiller v. Dover Area School District in which the teaching of intelligent design in public school science classes was ruled to be unconstitutional. His talk traced the legal cases starting with the Scopes trial in Tennessee up to today, including Kitzmiller, and highlight the reasons for the jurisprudential progression.

Morning and afternoon plenary sessions were held on Saturday. There were 10 oral presentations (each 20 minutes plus 5 minutes for questions and discussion). The presentations were well attended, and covered a variety of topics pertaining to physics and physics education.

The General Business meeting was held before lunch. After the afternoon plenary session, there was a Demo Show (an idea picked up from the joint meeting with SEPA section the previous year), presentation of award certificates to student presenters and drawing for door prizes.

More information at http://www.aaptcps.org

—Lynn Aldrich, Section Representative

Chicago Section

The Chicago Section met on Saturday, April 9th at Niles West High School in north suburban Skokie. About 45 high school and college physics teachers were in attendance. Our keynote speakers were Chandralehka Singh from University of Pittsburgh and Siva Sivananthan from the University of Illinois at Chicago.

Dr. Singh's talk was entitled *Facilitating thinking and learning in and beyond the classroom* and Dr. Sivananthan's talk was entitled *Solar Cells: from Academic Research to Industrial Application*.

Dr. Singh also presented a workshop after lunch entitled "What Every Physics Teacher Should Know about Cognitive Research" and Curtis Hieggelke (Emeritus, Joliet Junior College) presented a workshop entitled "High School TIPERS."

Contributed papers included the following:

- *Spitzer/NITARP Opportunities for Teachers and Students*– Alex Antonow, Aneesh Sehgal, Richard DeCoster
- *A New Constant of Nature*– Ted Erickson
- *NITARP AGN studies with students and scientists*– Elizabeth Ramseyer
- *Using Labs to Assess Learning*– Diane Riendeau and Mitch Tucker
- *Experimenting with High-Speed Digital Video*– Joseph Serpico
- *Studies of Cosmic Rays at Chicago State University*– Alma Navarro, Gustavo Torres, Edmundo Garcia
- *The Proton and Neutron Radii of the Atomic Nuclei*– Ilia Gulkarov, Paul Dolan
- *Physics: A History of Revolution and Change*– Scott Beutlich
- *Physics Analysis of Pianos*– Gordon Ramsey and students

- *Bringing Nuclear Physics Concepts into the Introductory Physics Course*– Chaan Thomas, Mel Sabella, Edmundo Garcia
- *Searching for Potentially Hazardous Asteroids*– Brian Elwood, et al.
- *Center for the Physics of Living Cells, UIUC*– Sharlene Denos

There were also several posters presented in a poster session at lunch.

At the business meeting we discussed the joint meeting in the fall with IS-AAPT, ISAT and IACT at the conference center in Tinley Park, Illinois. Paul Dolan made a call for nominations for officers in advance of the elections at the fall meeting. Debby Lojkutz presented the Treasurers' report. Gordon Ramsey presented the AAPT Executive Officers report from the National Meeting.

In the fall, the Chicago Section met jointly with the Illinois Section of the AAPT, the ISTA, IACT and several other local teacher groups. The two-day conference was held on October 27-29, 2011 in the Tinley Park Conference Center. For the first time ever, the science teacher organizations in Illinois met together to provide pre-K to college level educators with professional development. Presenters included teachers, teacher-trainers, scientists, agency and organizational representatives, and vendors.

Schedule:

Thursday, October 27	
Noon – 8 pm	Registration
5 pm -8 pm	Reception
6 -7 pm	Power Hour – Exhibit Hall
8 pm	ISAAPT Council meeting
Friday, October 28	
7-4:30 pm	Registration
7:30-noon and 1:15-4 pm	Exhibits by vendors
7:30-11:50 am	Educational Presentations – 90 presentations ranging in length from 5 minutes to 3 hours.
12:00-1:15	President's Luncheon; Keynote Speaker Brady Barr – Moderator of NGS-TV's "Dangerous Encounters"
2:00-4:00 pm	Educational Presentations – 44 presentations ranging in length from 15 -50 minutes
4-5:30 pm	Showing of "The Atom Smashers"
5:30	ISAAPT Business meeting
7-10 pm	Gala Evening at the Museum of Science and Industry
Saturday, October 29	
7:45 am	CSAAPT Business Meeting
8:30-noon	Educational Presentations – 36 presentations
9 am -12 pm	Field trips to the Museum of Science and Industry, Adler Planetarium, The Morton Arboretum, Exxon-Mobil Refinery

At the business meeting we discussed the meeting in the spring at Thornton Township High School. The slate of officers was voted on and approved. Debby Lojkutz presented the Treasurers' report.

Officers (November 2011-November 2012)
President – Carl Martikean, Thornton Township High School
Vice-President – Joseph Kozminski, Lewis University
Secretary – Paul Dolan, Northeastern Illinois University
Treasurer – Debby Lojkutz, Joliet West High School
Section Representative – Martha Lietz, Niles West High School
Two-Year College Representative, Theodore Gotis – Oakton Community College
High School Representative – John Lewis, Glenbrook South High School

Upcoming meetings:
Spring 2012: Thornton Township High School – April 28
Fall 2012: Joliet Junior College joint with ISAAPT.

—Martha Lietz, Section Representative

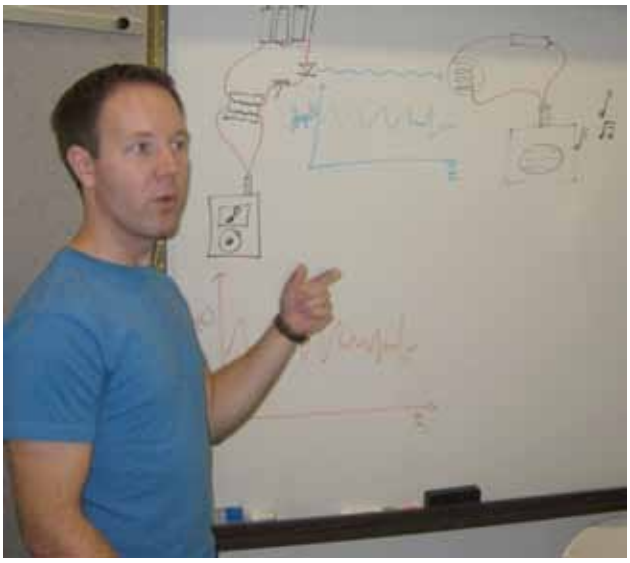
Florida Section

The annual fall meeting of the Florida Section of AAPT hosted Brian Tonner was held at Center for University of Central Florida in Orlando on October 21 & 22, 2011.

Friday evening
5:30 p.m. Registration, Meet and Greet
6:00 p.m. Dinner
7:00 p.m. Guest Speaker - Dr. Costas Efthimiou, University Of Central Florida, "Physics in Films"

Saturday morning
After welcome from by Ken Shacter, President FL-AAPT and Brian Tonner, University of Central Florida host, members presented contributed papers.

- Abdelkader Kara, [University of Central Florida] "Studio Class for College Physics"
- Jane Nelson, [Santa Fe College], "Angry Birds as Projectiles"
- Brian Tonner, [University of Central Florida], "Medical Physics: What to Tell your Students and Why"
- Jim Nelson, [Santa Fe College], "Palm Pipe Physics"
- Matthew Weed (pictured below), [CREOL – University of Central Florida], "Laser Communications, from scratch!"



• Bill Junkin, [Eckerd College], "iPAL: In-class Polling for All Learners"

• Ken Shacter, [Robert E. Lee High School], "Producing a YouTube Demonstration Video"

Saturday afternoon two workshops were offered:

• "In-class Polling for All Learners" by Bill Junkin (pictured below), [Eckerd College]

• "PTRA/AAPT workshop Circular Motion, Graphing Analysis, and Dark Matter" by Jane Nelson [Santa Fe College]

Business meeting was held during lunch.

1. Why people don't attend meetings discussion /districts impact/.
2. We decided to post section meeting highlights to encourage attendance.
3. We decided to ask for names of physics teachers each members area and develop an up to date membership list.
4. Be sure to ask Victoria Fischer to distribute to district contacts
5. We should try a paper mailing.
6. Ask a well recognized physicist as speaker to attract members
7. We always have a good meeting just hard to get people to come
8. We should request sponsorship from various companies
9. Continuing education / service education credits AAPT
10. Suggest putting "Share a Ride" option on meeting registration form

REPORTS

- All members of the section are encouraged to join AAPT
- Upcoming National meetings
- AIP survey
- AAPT Awards program
- Teacher Mentor program: can be done by email and done by university faculty
- Contests/Video/Photo/Certificates for teachers/students
- Publishing in journals/ How about article on web site?
- Jim asked AAPT Executive Board to review policy about sections affiliates/insurance/check-off list on membership renewal.

ELECTION

- President Elect: John Lucyk
- Vote by acclamation

—Jim Nelson, Section Representative

Iowa Section

The Iowa Section of AAPT held its annual fall meeting November 5, 2011 at Dowling Catholic High School in West Des Moines, IA with section President Diane May of Beckman High School officiating.

After a greeting by Dowling's Jerry Deegan, Sara Karbeling of Central Academy described her summer work at Fermilab in "Bringing New Physics into the Classroom: Experiences from the Physics Teacher Internship Program at Fermilab." Her work involved data analysis associated with the Compact Muon Solenoid experiment at CERN and she kept her students involved via a blog she wrote describing the experience. Our next speaker was Anita Vasto of ADM High School, who spoke on "Innovative Technology In Science Inquiry Scale Up: ITSI-SU" which is an NSF initiative to promote use of modeling and probeware by K-12 teachers in order to promote science learning. Teachers can download existing labs, customize them, or write them from scratch and post them for others to access. Andy Schreck (pictured below) of Dowling took us to his engineering classroom and in "Project Lead the Way" described a nationwide high school engineering program that offers 4 years of high school engineering courses, some in conjunction with area community colleges.

Following a refreshment break, Bill Cox, (Dowling High School – retired) spoke on "Skepticism and Communication," in which he discussed how to more effectively communicate science concepts to students and the general public. His main focus was on global climate change. Eric Olson presented "STEM Initiatives at Iowa Lakes Community College" in which he described the student population served and physics related courses at his institution. A key feature is the NSF funded program to IGNITE ("Inspiring Growth, Networking, and Innovation in Technical Education") student learning. Our morning session wrapped up with our keynote speaker, Craig Kletzing of the University of Iowa, presenting his planned research into the behavior of the Van Allen radiation belts in: "Stormy (Space) Weather: NASA's Radiation Belt Storm Probes Mission."

After lunch, John Zwart (Dordt College) presented several light related demonstrations in "Oldies but Goodies in Light and Optics." Next, Jay Cutler (Charles City High School – retired) walked us through a recent Physics Teacher issue in "Review: The Physics Teacher (September 2011)" pointing out how many highly interesting and useful papers appeared in that one issue.

Wade Sick (Southwest Community College) in "Physics 1898 Style" showed images from a variety of antique physics texts. While some of the equipment shown is more likely to be found in museums, many are still being used today.

We ended our day with the business meeting. We began with the election of new officers. President elect for 2012 is John Zwart of Dordt College. Vice President for 4 year colleges is Michael Farndale of Waldorf College. Larry Escalada (University of Northern Iowa) will continue as the Teacher's Award Committee member, Dale Stille (University of Iowa) will continue as secretary, and Jay Cutler (Charles City High School) agreed to serve one more term as treasurer. Our treasurer reported that we have a bank balance of $4500. We voted to hold next year's meeting at Iowa Lakes Community College in Estherville, home institution of next year's president Eric Olson. We ended with a discussion of how to better get notice of our meetings to high school teachers. Bill Cox and Jay Cutler agreed to investigate ways of improving the process.

—John Zwart, Section Representative

Kentucky Section

The annual fall KAPT meeting was held in conjunction with the Kentucky Academy of Science on November 5, 2011 at Murray State University.

A three-hour workshop for physics teachers was held that Saturday morning, with roughly equal attendance from high school, two-year, and four-year institutions. For the "Making Magnetism Visible" portion of the workshop, Dr. Keith Andrew (Western Kentucky University) presented interactive activities for both conceptual and quantitative understanding. Tips and tricks were shared to allow the participants to immediately replicate the demonstrations in their own classrooms. After a tour of the equipment used in Murray State University's solid state physics lab, there was a panel discussion to share information about the various regional and national competitions available to Kentucky high school students.

Posters were displayed all day, with one poster authored by a high school students and eight of the eleven posters authored by undergraduate students entered in the Undergraduate Research Competition.

The afternoon was devoted to thirteen oral presentations (including five students entered in the Undergraduate Research Competition) representing researchers from almost as many institutions.

—Richard Gelderman, Section Representative

Long Island Section

The winter meeting of Long Island Physics Teachers was held on December 3, 2011 at Smithtown High School East and hosted by physics teacher Dr. Gillian Winters. LIPTA upheld our gourmet standard by providing a breakfast of frittatas, muffins, and pastries. Suitably fortified, President, Ed McDaniels welcomed thirty-one teachers from Nassau and Suffolk Counties and introduced physics teacher Barbara Speight, our first speaker.

Ms. Speight supplied a smorgasbord of activities as she presented "Labs to Consider." Stations were set up all over the laboratory from a variety of Physics topics. Groups moved from optics to circuits to forces, trying each activity, This allowed us to put ourselves in the place of our students (always an enlightening turnabout). Everyone was supplied with multiple copies of the worksheets to take advantage of the chance to make measurements and notes and to be able to use them for their class copies.

Testing the 'Greek waiter's tray' make-and-take

Terese Keogh, our newsletter editor and AP teacher at Manhasset High School, took the spotlight next to discuss her "AP Strategies." Although many New York AP teachers delay doing the course lab work until after the AP exam, Ms. Keogh recommended using a more hands-on, lab oriented approach. Instead of worrying about spending lecture time trying to cover every possible topic on the AP exam, she maintained that students will learn and remember the work that they do in lab more effectively than in lecture. An outline of activities and curriculum was provided.

Barbara Speight returned to lead the workshop participants in a make and take session, the Waiters Tray. Our second vice president, Bill Leacock of Mepham High School used his considerable handyman resources to help Barbara out with the materials needed. Dr. Winters and Adam Plana couldn't resist trying out their new trays.

The day ended at noon, as everyone left to start their holiday preparations, agreeing that they had gained interesting new activities for their classrooms.
http://www.lipta.org

—Tania Entwistle, Section Representative

Michigan Section

The MIAAPT conducted two meeting this year. The spring meeting was hosted by Grand Valley State University and the fall meeting was a joint meeting with Center for Astronomy Education (MI branch) at University of Michigan-Dearborn.

The high light of the spring meeting was the presentation of the MIAAPT Distinguished Service Award to Kathy Mirakovits and a Key Note Address and workshop run by AAPT President David Sokoloff. In addition we had a number of interesting papers and an update on the tsunami in Japan and nuclear power generation. Abstracts of the presentations are available at http://web.miaapt.org/meetings/spring-2011. Attendance at this conference was about 45.

The fall meeting featured Astronomy Education activities and started with a Friday evening workshop lead by Mike LoPresto. Saturday morning about 50 of us gathered for the Call to Order by our President Brad Ambrose. The morning session featured a number of papers by our members. The topics varied from A Celebration of 100th and 1000th Anniversaries of Physics using postage stamps to Conversion of Compressional Waves to Shear Waves along with a number of astronomy related topics. Again abstracts of all papers are available at http://web.miaapt.org/meetings/fall-2011.

The Saturday Key Note Address: Evolution of Peer Instruction was given by Kevin Lee, University of Nebraska, Lincoln. Following the business meeting we had a giant giveaway arranged by Mike Faleski. He had arranged for gifts from a number of very generous vendors.

—Alan Gibson, Section Representative

Nebraska Section

Meeting was called to order by Judy Stucky.
Dina Wingfield was introduced as a new member.
Tom Brestel read minutes from the Winter 2011 meeting.
Kendra Sibbernsen gave a section report of AAPT.
Chris Wentworth was nominated and elected President Elect.
Winter 2011 meeting to be at Doane College March 24th, if available.
Physics of Toys and/or Modeling were possible themes.
Video Analysis and possibly a workshop on modeling by Tom Brestel.
Student research presentations were also suggestions.
Westside was chosen as the Fall 2012 meeting sight.
Meeting was adjourned.
Treas. Report: After Dues and expenses, the section has $3096.15

—Leonardo Hsu, Section Representative

North Carolina Section

The 16th Annual Fall Meeting of the NCS-AAPT was a Joint Meeting with the Southern Atlantic Coast Section (SACS-AAPT) and the Society of Physics Students (SPS). The meeting was held November 18-19, 2011 at the University of North Carolina Asheville (UNCA) in Asheville, NC.

There were 98 registrants. We were pleased with the strong showing from SACS-AAPT. Several students and high school teachers took advantage of the free or reduced registration costs and were allowed to attend the workshops at no charge.

The Friday evening banquet speaker was David Cassidy of Hofstra University who spoke on "A Short History of Physics in the American Century" which is also the title of his recently published book. Perhaps the most interesting point of his talk was his description of the way in which the U.S., under the impetus of two non-physicists, managed to take on such a significant role in the world of physics. Professor Cassidy also spoke Saturday morning on "The Discovery of Black Holes: A Historical Approach". Again, he came up with several surprises including how the work of Oppenheimer and his students on Black Holes came about in a totally unexpected way.

Altogether there were 38 papers and workshops presented. A few section meetings earlier members were encouraged to offer posters. The posters would be displayed near the coffee and vendor displays to encourage interaction. The number of posters has fluctuated and at this meeting there were eight posters. Although the number was down, the interaction was high.

Prizes for the best paper/poster are offered at every meeting. The prize for the Best Undergraduate Student Paper went to Rob Argue of Elon University for "Monte-

Carlo Simulation to Optimize Scintillator Systems". The prize for the Best Graduate Student Paper went to John Atkins of Georgia State University for "Exploring the Integration of Computational Modeling in the ASU Modeling Curriculum". The prize for the Best Pedagogical Paper went to Aaron Titus of High Point University for "Gellin' in the Physics Lab".

Some special SPS activities included the playing of "Physics Jeopardy", a screening of "A Brief History of Time" and a workshop on SPS Leadership and Outreach led by Martin Kamela of Elon University.

The break between the end of the Friday night banquet and the Friday evening lecture was filled in with several musical demonstrations by Michael Ruiz of UNCA.

For a review of highlights of the meeting go to http://physics.unca.edu/photo-albums provided by Michael Ruiz and click on "Fall 2011 AAPT/SPS Meeting".

We would like to thank our supporters: University of North Carolina Asheville, North Carolina State University, Spectrum Techniques, Cambridge University Press, Oxford University Press, and the University of North Carolina Pembroke for contributing funds for coffee and door prizes and especially the staff and volunteers from UNCA.

—John L. Hubisz, Section Representative

Ohio Section

The Spring 2011 Meeting of the OSAAPT was held on Saturday, February 26th in the Wright Laboratory on the campus of Oberlin College in Oberlin, Ohio. Dr. Thomas Greenslade, professor emeritus of Kenyon College gave a presentation on what teaching Physics in the 19th century tells us about teaching physics in the 21st century. Drs. Steve Majoros and Steve Hubbard presented various teaching techniques from physics education research on why "It Isn't Your Father's Physics Class Anymore."

After lunch, meeting attendees selected one of the three concurrent workshops in which to participate. These were "Teaching Physics for the First Time, Part II" by Gene Easter and Bill Reitz, "Labs for Astronomy" by Roy and Jodi McCullough, and "The Physics of Soap Films" by Elizabeth Mann. The meeting concluded with the usual "How I Do It" session and the 'giveaway".

The Fall 2011 OSAAPT Meeting was held in Smith Hall at Kent State University on Saturday, October 8th in Kent, Ohio. Two of the best physics demonstrators in Ohio, Dr. Stanley Christensen and Richard Heckathorn, presented a very entertaining and educational presentation of their best demos. Karl Klimek from the Square One Education Network presented the purpose and the work of the Network.

Following lunch participants could select to attend two of the following workshops to attend: "The Physics of Soap Bubbles" by Elizabeth Mann, "The Segway Science Experience" by Karl Klimek, and "Not Your Father's Physics Call, Part II" by Steve Majoros and Steve Hubbard. Gene Easter and Bill Reitz also offered "Teaching for the First Time, Part III" workshop. The meeting ended with a gigantic "giveaway."

—Paul Robinson, Section Representative

Ontario Section News

2011 Annual Conference Report

The 2011 Ontario Association of Physics Teachers (Ontario Section of AAPT) annual Conference took place from May 12 to May 14, 2011. It was hosted by the Department of Physics and Astronomy at McMaster University in Hamilton, Ontario. Once again, the Program Organizing Committee put together an exciting and very vibrant program. This year's theme was "Physics at Work", and once again, both the content and the interactive delivery of many presentations were inspired by the results of Physics Education Research. The thirty-third annual AAPT conference turned out to be a great success, both in terms of the attendance and the engagement of those who attended.

On Thursday evening, our delegates received a warm welcome from our hosts – members of the Department of Physics and Astronomy at McMaster University. After a traditional opening barbeque, the delegates attended "Extreme Alien Worlds - A 3D Voyage Through and Beyond our Solar System", a 3D Theatre Show in the Michael DeGroote Centre for Learning and Discovery. The show explored extreme environments of strange and exciting planets and moons in our Solar System - all in 3D. A combination of short 3D movies and interactive sessions with 3D slides introduced extra-solar planets, the various methods used to search for them, and the discoveries made so far. How did life start on Earth, and can we find it elsewhere in the Solar System or beyond? The show lasted for one hour, and included time for a question-and-answer session. Seeing planets you can almost touch, or having space particles whiz past your head develops an appreciation for the vastness of space and the extreme conditions on these alien worlds.

The Friday morning keynote talk by Dr. Kari Dalnoki-Veress from McMaster University was titled "Extraordinary Physics in Ordinary Systems". He shared beautiful examples of physics that are all around us that can be easily used to motivate our students.

Perhaps the most prominent feature of the recent OAPT conferences is that the majority of presentations were delivered in a highly interactive workshop format. We are clearly moving away from "lecturing" and toward interactive hands-on presentations involving the audience. The variety of topics is truly impressive. Overall, five workshop sessions were scheduled, each with 6 parallel workshops available to choose from! The complete list of the workshops and the links to their abstracts can be

found at http://www.oapt.ca/conference/2011/workshops.html You can learn more about the 2011 Conference and its program and see the conference photos by visiting http://www.oapt.ca/conference/2011/index.html

Awards

We are very happy to report that several OAPT members received prestigious provincial and national awards in 2011.

Congratulations to John Atherton who received the Premier's Award of Excellence in Leadership. John Atherton is an innovative, stimulating and visionary educator. He has a reputation as an outstanding mentor who inspires and drives teachers and students to be their best and to love and share their learning. During his time as an instructional leader at the Toronto District School Board, he established the GTA Physics Teachers' Alliance. In 2007, John launched the "Eureka Conference" which was attended by 600 classroom teachers – an event described by many science teachers as the most useful professional development event they ever attended.

Congratulations to Glen Wagner and Patricia Mitchler who won the National 2011 CAP Award for Excellence in Teaching High School/CEGEP Physics. The 2011 CAP Award for Excellence in Teaching High School/CEGEP Physics - Ontario was awarded to Mr. Glenn Wagner, Centre Wellington DHS (Centre Wellington, ON) to recognize his skill at using differentiated teaching methods to significantly improve student performance. Glenn has established himself as a teacher that draws students into physics. A master at differentiated instruction, Glenn incorporates a broad range of teaching strategies such as peer instruction, interdependent group work, concept mapping, and problem-based learning methods in his classroom. With a track record of turning poor student performance into strong student accomplishment, Glenn has also the author of several research papers on Physics teaching.

The Canadian Association of Physicists (CAP) is pleased to announce that the 2011 CAP Award for Excellence in Teaching High School/CEGEP Physics - Prairies and Northwest Territories is awarded to Dr. Patricia D Mitchler, Kelvin High School (Winnipeg, MB) in recognition of her creative abilities in teaching physics that leads to outstanding student performance. With an exceptional understanding of scientific pedagogy, Patricia has created a climate of learning in the classroom that produces student excellence. Putting as much effort into broad classroom instruction as well as personal mentoring, her students continually place in the provincial top ten in the CAP physics high school prize exam year after year. She is a truly gifted educator, and we are most happy to honour her achievements.

Congratulations to Joanna O'Meara who won 2011 CAP Medal for Excellence in Teaching Undergraduate Physics. Joanne O'Meara has won the 2011 CAP Medal for Excellence in Teaching Undergraduate Physics. The award recognizes her outstanding and innovative work in the classroom, impressive range of engagement in physics education research, and her broad reaching impact beyond the walls of her own classes, from the primary school level on up to the development of a national university-level physics curriculum.

Well done, John, Glenn, Patricia and Joanna!

Other news

OAPT newsletter is going entirely electronic. It can be accessed at http://www.oapt.ca/newsletter/index.html.

Thirty-Fourth OAPT Annual Conference 2012 "Physics: Opening Doors – Opening Minds"

The Perimeter Institute in Waterloo, Ontario is hosting out next conference, April 26-28, 2012. We will have a huge range of workshops ranging from physics in biology, drama, YouTube, philosophy and cutting edge research. A conference flyer can be downloaded from http://www.oapt.ca/uploads/2011/oapt_conferenc5.e_flyer_2012.pdf
For a complete OAPT President's update please visit http://www.oapt.ca/presidents_page/

—Tetyana Antimirova Section Representative

Southern Nevada Section

On November 18, 2011 SNAAPT met on the UNLV campus. In addition to short discussions of physics in the news (including the possibility of superluminal neutrinos, climate change supported by Berkeley skeptic, and the public's perception of global climate change) and issues around section meetings, we had a presentation by guest speaker Dr. Oliver Tschauner, UNLV, entitled "Quasi-Crystals Bring You to Superspace." Quasi-crystals are subject of active research, due to their novel electronic and optical properties. Delivered at a level appropriate for science teachers, Dr. Tschauner informed the audience that in contrast to the 230 possible arrangements (space groups) of normal crystals–those with periodic structure in three-dimensions (3D)–quasi-crystals, with their 5-point symmetries, are not periodic structures in 3D. Lattice periodicity is recovered, however, by conceiving quasi-crystals as normal crystals in higher dimensions.

—Janelle M. Bailey, Section Representative

Southern California Section

The Fall Meeting of the Southern California Section was held Saturday, November 5th at California State University Dominguez Hills. Attendees were welcomed to the meeting by SCAAPT president Jeff Phillips and Laura J. Robles, Dean of the College of Natural and Behavioral Sciences

at Dominguez Hills. Special thanks are due to local host John Price for arranging the meeting site and to the physics department for providing morning refreshments. About 65 people attended.

Dr. Jim Hill jhill@csudh.edu from CSU Dominguez Hills gave the morning invited talk *Preparation For Undergraduate Physics Majors: Anecdotes and Ideas.*

Dr. Hill described that while the main features of physics BS curriculum have not changed much in the last twenty or thirty years, education, science education, education "delivery," and students have changed significantly. Industry requirements and social pressures have also changed, as has the nature of physics research at universities. The very definition of what ought to be required in a major might be a moving target. The one important change in undergraduate physics education since many faculty were in college is the increasingly critical role of undergraduate research. Current employment prospects for graduates require more and more education and more research skills. Research experience also gives students enthusiasm for physics. The talk gave an overview of the current undergraduate research programs at Cal State Dominguez Hills, the current curriculum, and included a discussion of some ideas many physics departments are trying as they move into the future of undergraduate physics education.

KC Cole kccole@usc.edu from the Annenberg School for Communication at USC gave the afternoon invited talk *A Physics Love Story*. KC spoke about Frank Oppenheimer and his creation of the Exploratorium. Much of her talk was based on material in her latest book *Something Incredibly Wonderful Happens: Frank Oppenheimer and the World That He Made Up*. She described how when she first met Frank in 1972, she knew nothing (and cared less) about science but that thanks to his knack for making physics (especially) irresistible, she (like thousands of others) became hopelessly addicted. The trick was finding out that science had nothing to do with tests and right answers—and everything to do with intuition, aesthetics, play, noticing, honesty, guesswork, aimless wandering, idle curiosity, and yes, saving the world. Frank Oppenheimer was schooled in art, science and "ethical culture" but found himself a pacifist building an atomic bomb, a physicist exiled from science because of his outspoken efforts to stop the madness, raising cattle and teaching high school in the Colorado mountains. Frank Oppenheimer used what he'd learned from art and science and teaching and ranching to make up his own world--a "museum of human awareness"—which was soon copied all over the world.

During the business meeting, the proposed SCAAPT by-laws were described, debated, and passed. Attendees were reminded that SCAAPT is funding "Local Area Networks" (LANs) and were asked to submit applications. The first $100 award was made to Bob Rumer from Cal Lutheran to support collaboration with high school teachers in the Thousand Oaks area. A new SCAAPT initiative—a student video contest—was announced. The members viewed a slide presentation on the Ontario Winter Meeting featuring highlights of the meeting. All were encouraged to attend.

The ever-popular Show 'n' Tell featured demonstrations by:

Peanut McCoy, "Technicolor algebra"
Ertan Salik, "Very interactive books on the iPad, will this be the future of the textbooks?"
Rae Anderson, "Desktop Whiteboards to Read Students' Minds"
Mark Helmlinger, "Multiple demonstrations involving light and greenhouse gases"
James Lincoln, "PhysicsVideos.net" Beats and Mozart
Bill Layton "Exploring your Universe"
Lee Loveridge "Spin ½ with Arm"
Gary Reynolds "Grad List"
Frank Lee "High Speed Photography"

The following contributed talks were presented:

"Computer Supported Collaborative Physics" Norman Herr, California State University, Northridge
"Remedying the Typical Text's Discussions of Faraday's Law and the Maxwell-Ampere's Law" Eric Hill University of Redlands
"10 Things You Should do with a Tuning Fork" James Lincoln Tarbut V' Torah HS
"Enhancing Astronomy Lectures with the iPad" Richard Reins Los Angeles Mission College
"Media sharing websites and physics education" Edward Price CSU San Marcos
"Applying Technology in Large Lecture Physical Science Classes" George Kuck CSU Long Beach
"Combing large and challenging teaching assignments with research and discoveries at the frontier of physics for the improvement of (undergraduate, graduate and high school) education as well as research in physics" Kenneth Ganezer CSU Dominguez Hills

The meeting ended with our World Famous "Order of Magnitude Contest." This meeting's question was: *What is the probability that a human being would be hit if a satellite breaks up into 30 reentry-surviving pieces?* The median answer was 2×10^{-10}. Steve Paik won a $100 gift certificate donated by Vernier. James Lincoln won a book on astronomy peer instruction and Conrad Hirano, and Paul DeVoe, and G. Bevli won water bottles donated by AAPT. We thank our corporate sponsors – Vernier Software and Technology http://www.vernier.com and the American Association of Physics Teachers – for their support and donation of door prizes.

The Southern California Section will hold its Spring Meeting April 21 at CSU San Marcos. Please bookmark the SCAAPT URL http://www.scaapt.org/ and check for more information in early spring.

—Mary Mogge, Section Representative

Washington Section

The fall meeting of the Washington section of AAPT (WA-AAPT) was held in Lind Hall at Central Washington University (CWU) Friday and Saturday October 7-8 2011. Saturday's sessions opened with a morning theme that focused on supporting effective teaching and outreach, both to promising new STEM candidates and to high school teachers. The first session described a comprehensive cohort program at CWU aimed at attracting and retaining science technology and engineering (STE) students. One unique feature of the Science Talent Expansion Program (STEP) is the multiple entry points approach. Students just beginning college start with the STEP 101/102/103 Freshman seminar, while transfer students have courses, STEP 301-302, that help them get connected to the department, other students, and faculty research. Michael Braunstein and Andy Piacsek from CWU presented.

This was followed by a description/discussion of Mechanisms for Regional Collaboration in Physics Education Research led by Andrew Boudreaux, Western Washington University (WWU). Two elements that already exist are the annual Foundations and Frontiers of Physics Education Research: Puget Sound (FFPERSPS) conference and a model for professional exchanges hosted on the web by Amy Robertson at www.perx.org.

Andy was followed by Stamatis Vokos from SPU who described the Learning Assistant (LA) preparation program at SPU (this is a Physics Teachers Education Coalition (PTEC) program). Stamatis quickly led the discussion into opportunities for collaboration which provided a nice set up for Bruce Palmquist from CWU to describe their Center for Excellence in Science and Mathematics Education (http://www.cwu.edu/~cesme/) and its role in teacher preparation at Central Washington University.

Recognizing that these presentations have a common thread a group discussion had been scheduled at this point. It was quickly apparent that the interest and diversity of ideas and issues would more than fill the time so it was agreed that we would convene in a special session after the business meeting in the afternoon (see below).

After a plug for the WA-AAPT production of a physics day of activities for the regional National Science Teachers Association (NSTA) meeting in Seattle on December 9th we broke for refreshments. (See report below.)

Briana Ponzer presented another in a sequence of interesting talks on student difficulties with ratio reasoning originating from the physics education research efforts of Andrew Boudreaux at Western Washington University. The talk, "Rates in unfamiliar circumstances: Investigating student reasoning abilities," Challenged students (and attendees!) to interpret such ratios as 0.1 s2/m (the inverse of an acceleration) and provided a context for productive instruction around learning ratios. Darren Collins of Tahoma High School Described his experiences with "FIRST Robotics". Dean Kamen (Segway Inventor) organized the "For Inspiration and Recognition of Science and Technology" (First) initiative 20 years ago. "FIRST Robotics" is one of their activities. Darren related his experiences as a physics teacher describing the young people involved (not physics oriented) and how he was able to show many of them that physics was within their ability and how a systematic approach, often using math, was preferable to trial and error. He cited Usfirst.org and firstwa.org for those of us who wanted to follow up.

Under the title "Atoms are Fictions of the Chemists" Sharon Rosell, Central Washington University, provided an historical account of the atomic theory noting that it is 100 years since Curie's Nobel Prize and Rutherford's experiments and that 2011 is the international year of Chemistry. Mirrors and laser pointers were then distributed for an interactive lecture demonstration example by Robert Hobbs of Bellevue College. The activity illustrated how inquiry style instruction in methodology can be strongly re-enforced with a hands on example that explains a curious observation. As implemented in class the second half of the observational puzzle is explained by the students as they employ the methodology outside of class as homework. The historical perspective is taken up again by Robert Ruotsalainen of Eastern Washington University as he brought us up to currency with Initial Mass Functions used in stellar evolution. Henrique Alves, a student of Michael Jackson at Central Washington University (and Bellevue College Alumnus) described the assembly and operation of a Far-Infrared Laser Cavity. This excellent presentation of an optically pumped Molecular (CO2) Laser illustrated the excitement that is generated by successful undergraduate participation in research.

The regular meeting was concluded with the presentation of the Joel Shaff Distinguished Service Award. Long time member Marv Nelson was recognized for his outstanding contributions to the Washington Section of AAPT where he is acknowledged as being instrumental in keeping the organization going through rough periods in its early years. Marv was awarded the Outstanding Introductory College Physics Teacher of the year in 1999 by the national AAPT, the first time this award was presented to a two year college faculty member. He was also instrumental in establishing the Two Year College Committee in the national organization and as well as the TYC21 initiative. Marv taught physics for more than 30 years at Green River Community College where his contributions to their physics program have been memorialized in the dedication of the Marv Nelson Science Learning Center in 2007. The Green River physics program was chosen as one of ten exemplary Two Year College programs by the SPIN UP project of the AAPT. Congratulations Marv!

Following presentations, the event was concluded

with the annual business meeting. Following the approval of the minutes and the treasurers report there was a discussion to raise meeting rates next year. It was decided that registration (membership) rates would be raised from $10.00 to $15.00 next year. High School teachers would not have to pay for registration during the first year and Society of Physics Student members can attend the meetings for free. Several organization activities were then announced:

AAPT Physics Day at NSTA: AAPT-WA will host an independent booth at the NSTA Area conference to be held in Seattle on December 8 - 10. Michael Jackson, Sara Sepehri and Robert Hobbs are working on putting this together.

WA Science Teachers Association (WSTA): It was suggested that we should make a greater effort to reach out to High School teachers in WA state. Robert Hobbs and Stamatis Vokos plan to attend the WSTA meeting in March.

Pacific Northwest Association for College Physics (PNACP): The next meeting will be held in Spring 2012 in Bellevue College. Robert Hobbs invited the members to attend.

Tom Haff announced that he hopes to start a monthly meeting of serious High School Physics Students at Issaquah High School and sought the blessing of AAPT-WA to do so. This generated enthusiastic discussion around activities and possible speakers. Michael asked Tom to make a record of the dates of these meetings and track the students who show up.

Northwest Undergraduate Women in Physics Conference will be held from January 13 -15 at the University of Washington.

The next AAPT-WA section meeting will be hosted by Western Washington University.

The meeting adjourned and the conferees split into two tour groups according to their interest in Central Washington's facilities while the remainder stayed in Lind Hall for a "Fellow Travelers" meeting around issues related to teaching physics, teacher preparation, and establishing a learning community among physics teachers. Early in this session Briana Ponzer and Kristen Larsen contributed ideas for getting new teachers connected to AAPT early on in their careers. Stamatis Vokos provided a detailed and revealing overview of the status of K-20 communication around the state describing locations and programs that are vibrant and areas where isolation is the norm. A wide ranging discussion around networking ensued. Primary/secondary/college as well as two-year four-year linkages were discussed as well as strategies for identifying faculty for involvement in a mentoring community. Andrew opened a discussion of institutional factors, both structural and cultural elements will need to be addressed. How do we build an environment that embraces a focus on producing the new faculty we need nationwide? Robert suggested developing materials and programs for a slightly scaled down LA position at two year colleges. Providing instruction and mentoring for student tutors who then are associated with a specific instructor and class section helps other students and produces a visible role model for teaching as a career objective. Transfer links from these programs to Schools with solid physics teacher preparation can then be strengthened.

This was the end of the Fall AAPT meeting. Two months later Friday, December 9, we came together again to produce the program for a physics day at the regional NSTA meeting in Seattle,WA. Shown after the presenter is an attendance estimate.

Invention Tasks That Promote Proportional Reasoning Skills in Physics and Physical Science Presenter(s): Andrew Boudreaux (Western Washington University: Bellingham WA) [Attendance ~ 55]

Putting Student Energy to Use with a Bike Generator! Presenter(s): Cecilia Tung (The Northwest School: Seattle, WA) [Attendance ~ 65]

Physics by Inquiry: A Guided Inquiry Curriculum Presenter(s): Lillian C McDermott, Peter Shaffer (University of Washington: Seattle, WA) [Attendance ~ 70]

Engaging Independent Projects to Teach Energy Presenter(s): Michael Braunstein, Michael Jackson (Central Washington University: Ellensburg, WA); [Attendance ~ 45]

Active Learning of Introductory Optics: Interactive Lecture Demonstrations and Optics Magic Tricks Presenter(s): David R. Sokoloff (University of Oregon: Eugene, OR) [Attendance ~ 80]

Interactive Lecture Demonstrations for Smaller Classrooms Presenter(s): Robert Hobbs (Bellevue College: Bellevue, WA) [Attendance ~ 30]

This program was very successful and well received by participants. Most presentations incorporated audience participation and the attendees joined in with enthusiasm right through to the last program in spite of the late hour on a friday at the end of the conference. WA-AAPT thanks the NSTA for the invitation.

—Janelle M. Bailey, Section Representative

To list your section meeting in the AAPT Calendar of Events, e-mail the information to mgardner@aapt.org.

American Association of Physics Teachers
One Physics Ellipse • College Park, MD 20740
301.209.3333 • www.aapt.org