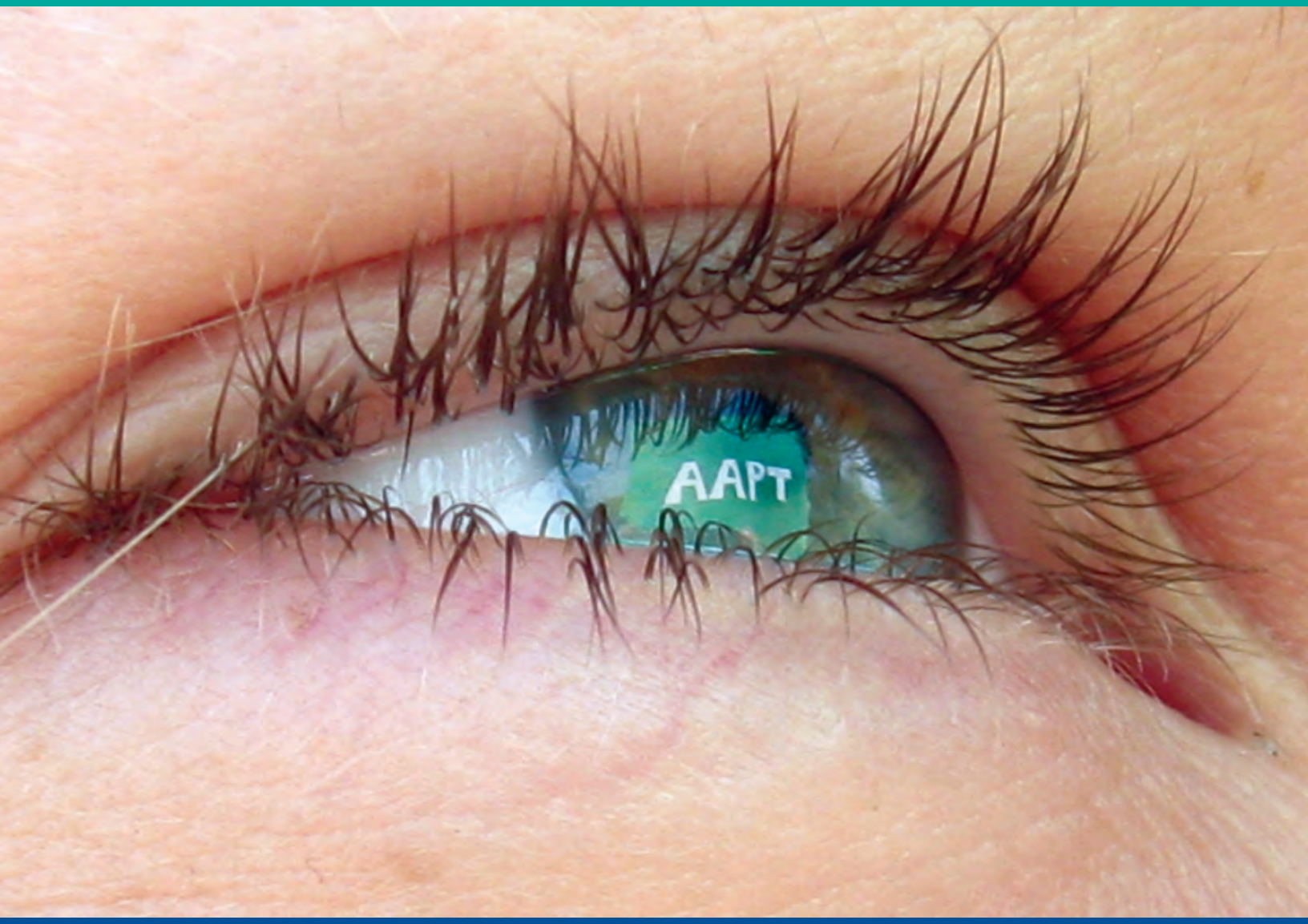
2009
annual report



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2009

2009 annual report

2009 in Summary

Presidential Statement

It has been an honor being your AAPT President during 2009. What an enjoyable and educational experience it has been! I considered 2009 as a year of stabilization for AAPT. The programs and activities sponsored and run by AAPT were very successful. There is only one area of operation that still needs attention, and I will address that later.

AAPT is very fortunate to have Warren Hein as its Executive Officer. Warren is very dedicated to AAPT. He has been able to develop a culture of fiscal restraint throughout the organization, but, at the same time, implement new programs to better serve the members. If having Warren as EO was not enough, Bo Hammer joined AAPT during the year as Assistant Executive Officer. He has brought new ideas and energy to all the projects he worked on.

One observation that became very apparent to me as President was that AAPT is a volunteer organization. It is amazing the number of people who volunteer their time and efforts to make AAPT the leading organization in physics education. Nothing shows this better than reviewing AAPT's activities and programs during 2009. I would first like to review the activities that can be classified as "continuing," and then look at those that were new initiatives in 2009.

Continuing Activities

For many, AAPT is known for its publications. These are, of course, the world class *American Journal of Physics* and *The Physics Teacher*. Besides this, the online journal, *Physics Education Research* is sponsored by AAPT and APS. The *eNNOUNCER* is the monthly online newsletter that keeps us all informed on what is currently happening in physics education.

The next activities that reach a great many of our members are our meetings. There were two National meetings during 2009: the winter meeting in Chicago, in conjunction with AAAS, and the very memorable summer meeting at the University of Michigan. Also under the AAPT umbrella are the many section meetings held throughout the year.

For Pre-College teachers there were the Physics Bowl, Physics Days at NSTA, Physics Photo Contest, PTRA, Team America Rocketry Competition, F=ma Preliminary Test, and the Physics Olympiad. For College-University faculty, there were the New Faculty Workshop, Spin-up Regional Workshops, Topical Conference on Advanced Laboratory, and Co-sponsored with APS is PhysTEC. For everyone, there were the Apparatus Competition, Bauder Fund Grant, ComPADRE, Lotze Scholarships, National Awards, and Mini Grants. To me this is an impressive list of activities.

New Initiatives

During 2009, there were many new initiatives that deserve recognition. One that is appreciated every time we log onto aapt.org is the overhaul of the AAPT website. This was all done in house, and is such an improvement! Another activity that will affect the future of AAPT is the new Executive Officer Search. When Warren came to AAPT as EO, he told everyone he planned to leave at the end of 2010, and this is on track. The new Executive Officer will be selected by the Executive Board during 2010, so that there can be a smooth transition.

During 2009 the Executive Board took up the task of strategic planning. The success of this planning was enhanced when Karen Johnston agreed to facilitate our early discussions. This planning culminated at the winter meeting during the mini-retreat for the Section Representatives and Area Committee Chairs. They spent a day giving input on the plan. Hopefully during 2010 this round of strategic planning can conclude.

Government Relations has become part of the activities of AAPT. Bo Hammer has taken the lead and is working in conjunction with AIP. It is important that Capitol Hill hear the opinions and interests of AAPT

2009 was a very successful year for AAPT in being awarded external funding. This should lead to new exciting activities. PhysTEC II was funded. APS has the lead on this project, but AAPT is scheduled to have more responsibilities in this continuation. ComPADRE Pathway II was funded. This will allow ComPADRE to continue to develop. To me it is amazing that just several years ago ComPADRE seemed to be off the radar screen for most, but it is now becoming a useful tool to the physics teacher. Related to ComPADRE, a project called Physics Education Research Users was funded. This will help make PER results available to physics instructors not in the PER community. It sure sounds promising. Last, but not least, is a funded project called New Faculty Workshops for TYC. This is exciting for the TYC community who remember the benefits of TYC21.

One Last Problem

With all the preceding good news, it is important to report that there is still one problem that has not been corrected. It was my biggest disappointment as President. The AAPT budget is still not balanced. The National Office was frugal during 2009, but still the budget was not balanced. This cannot continue. Hopefully, in 2010 with tighter budgeting, better results will occur. The Executive Board has committed to monitor this progress and take appropriate actions if necessary.

Executive Officer Statement

The AAPT Executive Office is pleased to bring you this 2009 Annual Report. This report fulfills several important roles for our organization. First and foremost, it provides a report of the financial status of the organization as of December 31, 2009. Second, it provides a permanent record of the organizational structure as of December 31, 2009, and recognizes the contribution of the many volunteers who give of their time to continue the many programs of AAPT and serve in governance roles in the organization. Third, it is an opportunity to recognize the many donors to AAPT whose contributions support our awards and many of our programs such as the International Physics Olympiad, Physics Days at NSTA Area Conferences, student memberships, and new teacher workshops. Finally, the annual report gives us an opportunity to highlight several of our funded projects and the portfolio of AAPT activities including our meetings and publications.

Financial Status

I am pleased to report that AAPT's financial picture has improved considerably after two years of deficits that exceeded one million dollars, even before the declines in our long term reserves were taken into account. However, 2009 was still a deficit year in terms of the operating budget and this situation cannot continue. The 2010 operating budget is again a deficit budget with a much smaller deficit than in 2009. This was necessary in order to not severely cut programs, increase membership dues and meeting registration, or reduce staff beyond already critical levels. The goal is to have a balanced operating budget for 2011 which will be a major challenge for the new Executive Officer, the AAPT staff, and the Executive Board. The 2009 AAPT Audited Financial Report can be found on pages 30-32.

2009 Organizational Structure

AAPT would not exist as an organization without the dedicated services of our many volunteers. In addition to the members of our Executive Board and the Section Representatives who serve on the AAPT Council, AAPT's 18 Area Committee involve over 160 members in the activities of the organization. Many other volunteers donate their time to conduct various activities such as the High School Photo Contest, the Physics Bowl, the International Physics Olympiad, and serve on committees such as the Committee on Meetings, the Nominating Committee, and the Membership and Benefits Committee. The list of committee members, section representatives and other volunteers begins on page 26.

Donors and Contributors

AAPT depends heavily on the donations of its members to a number of designated funds that support various AAPT programs such as the AAPT awards, the New Teacher Fund, the Undergraduate Student Fund, and to support activities such as the International Physics Olympiad. All of the AAPT awards were established without establishing an endowment for the awards which means that cash prizes and expenses associated with the awards had to come from operating funds or reserves. The Executive Office has begun the process of raising endowments for each of the awards but must rely on donations to the Annual Awards Fund until they are fully endowed. Although 2009 was a difficult financial year for many of our members, AAPT still received many generous contributions that helped reduce the operating fund deficit beyond what it would have been without your generosity. A list of donors for 2009 can be found on pages 24-25 of this report.

Portfolio of Projects and Programs

On pages 16-21 you will find highlights of a number of our current activities and projects. In addition to our publications and meetings and projects such as the International Physics Olympiad, there is information on many of AAPT's NSF-funded projects. Many of these are collaborative projects such as the workshop for new physics and astronomy faculty that is collaborative with AAS and APS, ComPADRE, which is collaborative with APS and AIP, and PhysTEC which is collaborative with APS. For some of these collaborations AAPT is the fiduciary agent and the recipient of the grant (ComPADRE and new faculty workshop), in other cases APS is the fiduciary agent and recipient of the grant (PhysTEC and Noyce Scholarship). In all cases AAPT works closely with the other physics and astronomy organizations to make the best use of funding received from government agencies and private donors to advance physics and astronomy education at all levels.

As members of AAPT and as physics educators, we share the belief that an understanding of physics will enrich the education and future employment prospects of all students. Member, volunteer, and donor support of the organization's goal of "Enhancing the understanding and appreciation of physics through teaching" makes our programs and publications in support of physics education possible. Thank you again for your support.

Mission

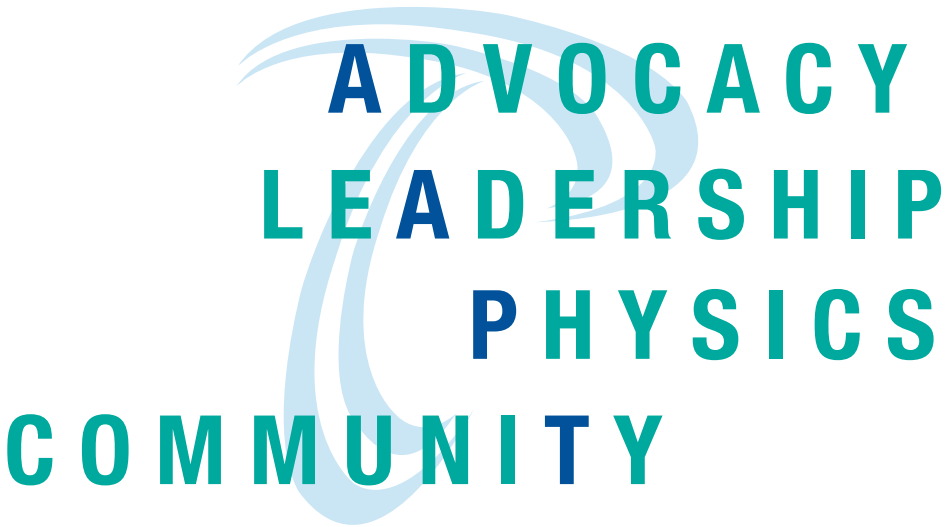
AAPT's mission is to enhance the understanding and appreciation of physics through teaching.

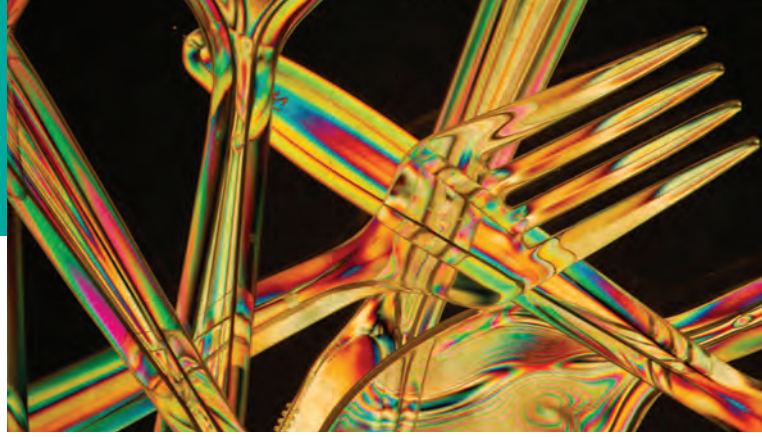
Values

Embracing the notion that physics understanding is critical to the well-being of society, AAPT is committed to serving its members and the larger community by promoting effectiveness in physics teaching for diverse audiences and in various settings, with the strong belief that successful teaching is based on solid physics content and effective pedagogy; that students of various backgrounds have the capacity to understand physics; and that physics ultimately serves the public good. AAPT highly values collaboration and dialogue among educators of physics at all institutional levels and endeavors to facilitate such interactions.

Vision

Aspiring to advance the greater good through physics, AAPT strives to be the leading voice, primary resource, advocate of choice, and driving force in physics education, serving professionals who teach physics and support physics teaching at all levels.





Publications

Having a strong publications program enables AAPT members to obtain greater insight into physics and learn about new teaching methods.

American Journal of Physics

The *American Journal of Physics (AJP)* continued to inform physics education globally with member subscriptions, institutional subscriptions, such as libraries and physics departments, and consortia agreements. The 6,414 subscriptions served the following education sectors:

Pre-College 20.3%
College/University 52.4%
Student/Unemployed 11.5%
Non-Teaching 12.2%
Other 3.6%

The rate of submission to *AJP* is stable at approximately 800 submissions per year. The acceptance rate is about 25%. In the near future we will be upgrading the online *AJP* website hosted by AIP's Scitation®, so that many new online tools will be available to subscribers.

Resource Letters

AJP periodically publishes Resource Letters on topics that are of interest to college and university physicists, astronomers, and other scientists who wish to improve their courses or to serve as bridges for those who are moving into new areas of teaching or research. Three were published in 2009.

Research in Physics Education

AJP also includes research papers that describe findings in the area of physics education research (PER) and are accessible to a broad physics readership. A special section is further devoted to PER papers. In 2009 there were 16 papers published in 12 issues.

Apparatus and Demonstration Notes

In this section, *AJP* publishes brief communications reporting new demonstrations, laboratory equipment, techniques, or materials of interest to teachers of physics. In 2009, *AJP* published six such reports.

Book Reviews

In addition, *AJP* publishes book reviews regularly on physics topics including the history of physics. Seventeen book reviews appeared in 2009.

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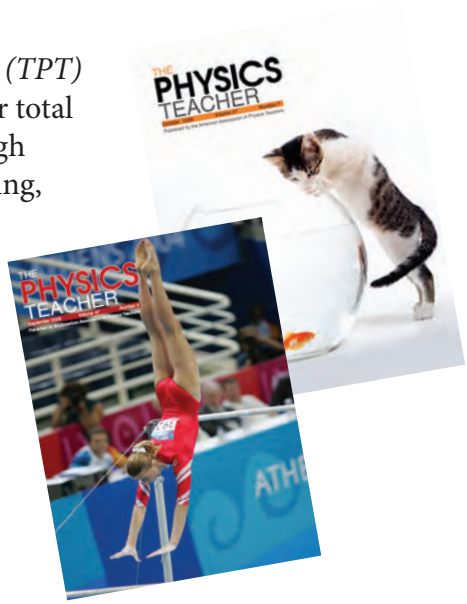
The Physics Teacher

Now in its ninth year under the editorship of Karl Mamola, *The Physics Teacher (TPT)* received a redesign providing a new look and more content for our readers. Our total readers are increasing as we see an increase in the number of subscribers through consortia agreements. With each issue, we strive to continue supporting, inspiring, and challenging our target audience—high school and college teachers of introductory physics—as well as our many other readers. We have recently expanded our efforts to publish more articles dealing with topics in contemporary physics. Several are in various stages of preparation and should begin appearing in our pages during the coming year.



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The Physics Teacher Statistics

- 9 issues – January – May, September – December 2009 (Volume 47)
- 625 pages – 221 reviewers – 116 papers, and 104 contributions to monthly columns (31 international authors/co-authors) – 38% acceptance rate
- 9, 612 subscriptions
- Approximately 42% of subscribers teach at the college and university level and 44% teach at the high school level. The remaining 14% are scientists at research facilities, students, and other interested members of the physics community.
- 221 referees

AAPT.org

Having strong online publications offers AAPT members convenient access to physics education resources, news, and member benefits.

Nearly a year in the making, the new look and feel of AAPT.org is designed to make the website more accessible and user-friendly overall. We hope that you enjoy the change and continue to give us feedback on what does and what doesn't work.

12/01/2009 to 12/31/2009 (one month) aapt.org had:
- 19,390 visits
- 72,254 pageviews
- 3.73 pages per visit

Home, Sweet Home

The face of AAPT.org was revamped. It's cleaner, interactive, and designed to be more inviting to new visitors. The new home page includes a "Features" area with photos and information pertaining to upcoming or ongoing programs, projects, events, and resources. In addition, there's a "welcome" box that gives new and returning visitors quick links to information that may be pertinent to them. Further down the page is a "navigation by audience" that guides visitors based on their role in the physics education community. The bottom half of the home page is split into a News section, and sections that encourage visitors to get involved with the association and provide information about what AAPT does. Overall, we felt that the new home page was one of the most significant changes that came with the redesign.

Look

We worked carefully to create an updated, clean, consistent look to the website. Retaining some old color schemes and implementing new text styles and spacing, we tried to make the site look friendly and inviting. Most importantly, the text and content is easier to look at with larger font sizes and more white space. Readability was a key goal of the redesign.

Feel

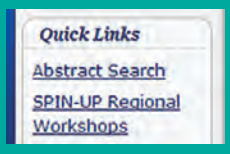
One of the primary goals of the redesign was improving navigation. We kept some of the naming that we felt worked, but also dropped and moved content around to make more sense. We hope it makes more sense to you. In the process, some "link rot" may have occurred. We feel we've made up for this by providing a far easier navigation that allows you to return to the content you were trying to find. We've also provided redirects from old links that we felt were crucial (and that many people used to link to AAPT.org). Finally, much of the code was rewritten to make the website more standards-compliant, mobile-accessible, and cross-browser friendly. It is also much easier to make changes to the design and page layout.

What's next?

We'll be working on better functionality, improvements in usability, more content, and improvements on legacy systems to make sure they are up to speed. Nearly immediately we will also begin work on making the registration (for events and membership) process more user-friendly and have the same look and feel as the rest of the site. Please drop us a line with suggestions, issues, or concerns. We're always open to new ideas.

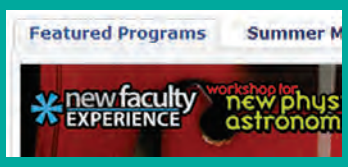
Redesign Highlights

Quick Links are now available on every page and point the visitor in the direction of popular links and resources from the section of the website they are in.



A new right-hand sidebar provides visitors with quick links to join and donate, as well as an at-a-glance events calendar and other featured resources.

The home page features area incorporates rotating tabs that allow us to fit more information and promotions in the same spot.



Social Networking

AAPT has made significant strides to open the channels of communication and community using popular social networking platforms. Below is a listing of the social networks we are a part of:

www.facebook.com/physicsteachers
www.twitter.com/physicsteachers
www.flickr.com/physicsteachers
www.youtube.com/physicsteachers
www.ustream.tv/physicsteachers

eNNOUNCER

The online news publication and email newsletter *eNNOUNCER* began regular monthly distribution in 2009. The AAPT NEWS *eNNOUNCER* is sponsored by PASCO, published monthly on our website and distributed to members by email. Each issue is published at the beginning of each month. This online-only publication contains dates and deadlines for upcoming conferences, meetings, symposiums and events, member news and information, and recent news from the worlds of physics and teaching. Major sections include organization specific items, action items and notable dates, News from the National Office, Member News, Section News, Recommended Reading, and Science and Education News.

2009 Top AAPT News Stories

Listed below are highlighted news stories for 2009 from the *eNNOUNCER*.
To read the full story go to http://www.aapt.org/aboutaapt/ennouncer/index.cfm.

January
Executive Officer Letter to the Membership
2009 Year of Science
February
President Adair's Farewell Address
TOC Alerts, New Member and Subscriber Benefit
2009 Winter Meeting in Conjunction with AAAS
March
AAPT Executive Board Develops and Approves Diversity Statement
New Executive Board Members Take Office
April
Summer 2009 Awards Announced
AAPT on Facebook
New Physics and Astronomy Faculty Reunion
May
Letter from the Executive Officer, Warren Hein
Philip "Bo" Hammer joins AAPT Staff
U.S. Physics Team Announced
June
TARC, Physics Bowl, ISEF, and Roller Coaster Design Winners Announced
AAPT on Twitter
July
Summer 2009 Meeting in Ann Arbor
New Faculty Workshop
August
Bringing Home the Gold: U.S. Physics Team Wins Four Gold Medals and One Silver Medal
2009 High School Photo Contest Winners Announced
September
2010 APS/AAPT Joint Meeting
PhysTEC Receives $6.5 Million Award
October
Request for Proposals: PhysTEC Sites
AAPT National Election
November
AAPT National Election Results
The New AAPT.org Goes Live
December
AAPT Sponsors Obama's "Educate to Innovate"
Barbara Lotze Scholarships for Future Teachers

eNNOUNCER Topics

eNNOUNCER publishes monthly news of interest to members including:

- **Recent AAPT related events and programs**
- **Members in the news**
- **Section news**
- **Workshops and topical conferences**
- **Scholarship and fellowship announcements**
- **Awards announcements**
- **Science related festivals**
- **Video and photo contests**
- **Career and teaching opportunities**

Membership

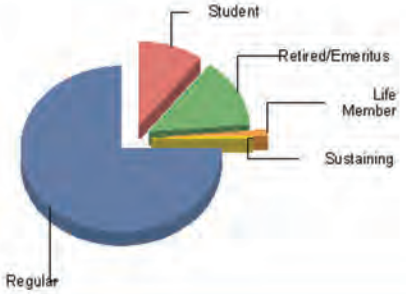
Spanning academia, research, and industry; comprised of educators, Nobel Prize winners, and students alike; our members bring a wealth of experience, diversity, and individual recognition. Most importantly, all share the same dedication to physics and the physics education community.

Membership Statistics

for December 31, 2009

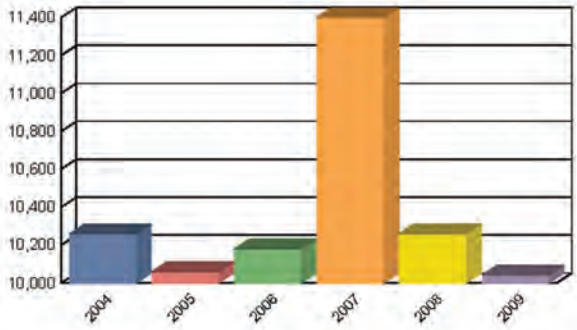
Membership by Member Type

Regular	7,519
Life Member	112
Student	1,024
Sustaining	24
Associate	21
Retired/Emeritus	1,341
Current Membership:	**10,041**



Regular	75.1%
Student	10.2%
Retired/Emeritus	13.4%
Life Member	1.1%
Sustaining	0.2%
Total:	100.0%

Membership Comparison by Month and Year



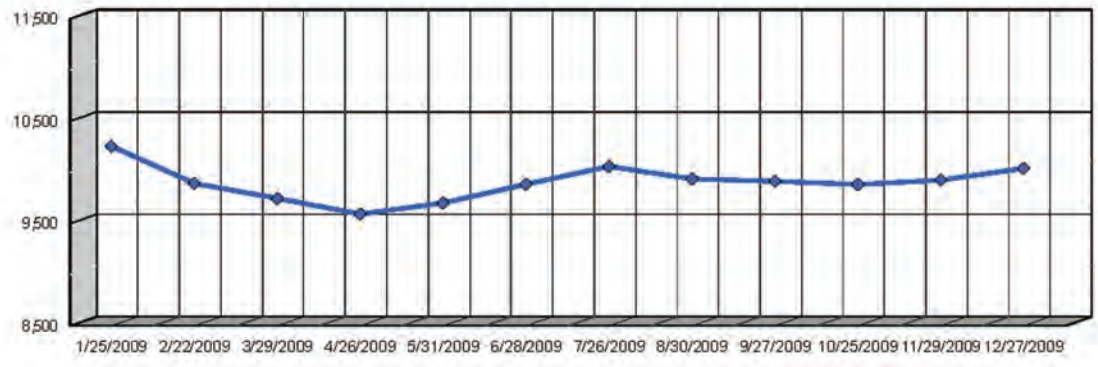
Dec - 2004	Dec - 2005	Dec - 2006	Dec - 2007	Dec - 2008	Dec - 2009
10,256	10,058	10,178	11,400	10,259	10,041

2007 numbers rose but so did the percentage of complimentary members vs. paying members. For instance, in 2007 12% of the membership was complimentary (1,383 individuals).

In 2009, the percent of complimentary memberships shrank to 7%. Complimentary memberships are comprised of emeritus, students, and section trial members.

2010 membership goals include further shrinkage of complimentary memberships.

Year to Date Membership Trends



**Please note that, before Jan. 2009, we stopped counting a member after the membership had lapsed for more than three months. In Jan. 2009, that 'grace period' was reduced to one month."*

Our processing time is much more efficient due to the move to electronic renewal.

National Meetings

Winter Meeting—In Conjunction with AAAS Annual Meeting

David M. Cook, Program Committee Chair

February 12–16, 2009, Chicago, Illinois

Plenaries: Vera Rubin, "Rotating Galaxies and Dark Matter," George F. Smoot III, "The History and Fate of the Universe," and "Exciting Research at Fermilab" with Niki Saoulidou, Rob Roser, and Michael Crisler.
AAPT Education Symposium: "Early High School Physics" Leon Lederman, Presider with Panelists Paul Hickman, Marsha Rosner, Ron Kahn, Gabriel de la Paz, Dorinne Williams, and John Hubisz.
Statistics: There were 737 attendees, 32 exhibitors, 289 sessions, 36 workshops, 5 tutorials, and 133 posters

Highlights
AAPT joined AAAS in Chicago this year for the Winter Meeting. David Cook, Program Chair, and Gordon Ramsey, Local Host Chair, provided an outstanding learning opportunity. The sharing of sessions, plenaries, hotels, and exhibit space provided extraordinary opportunities to attendees from both organizations. Approximately 1,000 registered AAPT participants benefited from an outstanding and diverse program that included invited and contributed paper sessions, poster presentations, workshops, and plenary sessions.

Additionally, much of the business of AAPT took place at this meeting with the Executive Board meeting several days to receive reports, consider recommendations, and provide direction to the association that will strengthen our community as we move to enhance physics education and inspire physics educators. The official AAPT Diversity Statement was just one outcome from their endeavors. Many of the attendees were also about the business of AAPT serving in roles such as Area Committee members and Section Representatives. They met to share information and plan new initiatives that will benefit the association and the larger physics community.

Early attendees were able to participate in workshops such as "Teaching Physics for the First Time," "Seeing the Invisible (NASA)," "Reaching, Teaching, and Keeping Underrepresented Groups in Physics," and "Open-Source Tutorials: PER-Based Instructional Materials with Resources to Facilitate Modification and Implementation." Workshops were hosted at Walter Payton College Prep thanks to the efforts of Chicago member, Sam Dyson. Another offsite workshop took participants to the Chicago Museum of Science and Industry where they gained inspiration and strategies for teaching physics and developing outreach activities at the largest science museum in the western hemisphere.

AAPT and AAAS attendees enjoyed a tour of the Fermi National Accelerator Laboratory (Fermilab), the nation's premier particle physics laboratory. Participants received a guided tour of some parts of the laboratory and got to see firsthand the facilities in which several important discoveries in particle physics have been made.

Poster Sessions continued to be very popular and were presented at two separate times with presenters available to answer questions for a half-hour during each Session. Saturday posters addressed Curriculum and Laboratories, Energy and the Environment, and Astronomy and Astrophysics. Sunday posters focused on Assessment and Physics Education Research Issues.

Popular Paper sessions included "PLANCK: Looking Back Toward the Dawn of Time," "Phascination in Physics—Dr. Donaldson's Haunted Physics Lab," "What Influences the Interests of Girls for Physics," "Fighting Wrong Beliefs," "Women and Men of the Manhattan Project: The Legacy of Wartime Physics in Chicago," "Help for Your Classroom at the Physics Classroom," and "Make and Take Physics Equipment."

The Demonstration Show, hosted by Tom Senior and Chicago area members, was a "Standing Room Only" event featuring a brass band and a pirate band. Attendees were welcomed to the event by Young-Kee Kim, Deputy Director of Fermilab and Professor of Physics at University of Chicago, then led through a series of Physics Demonstrations including Newton's Cradle with bowling balls, Bed of Nails, Whistling Tube, and Light Diffusion.

The Symposium on Physics Education, "Early High School Physics: Building a Foundation for Understanding the Sciences", presided over by Leon Lederman provided attendees the opportunity to learn from a panel of Physics Education experts on the importance of "Physics First" in high school science programs.

AAPT's awards program was showcased in the presentation of two major awards, the Richtmyer Memorial Award to Vera Rubin and the Oersted Medal to George F. Smoot, III. Distinguished Service Citations were presented to Paul Hickman, Charles Holbrow, Bob Shurtz, Gary White, and Courtney Willis. The Society of Physics Students presented the Outstanding Chapter Advisor Award to Samuel Lofland of Rowan University.

Vera Rubin's Richtmyer Award address, "Rotating Galaxies and Dark Matter," reviewed the history of our growing body of knowledge about the universe from Galileo's discovery that Jupiter has orbiting moons to our understanding today that the universe is populated by billions of galaxies and those galaxies are moving away from each other. We also now know that everything evolves; stars are born, evolve, and die; and the stars, galaxies, and clusters of galaxies we can see make up only 5% of the universe's matter. The remaining dark matter is only detected by its gravitational effect on bright matter.

George F. Smoot received the 2009 Oersted Medal. "The History and Fate of the Universe" was the title of Smoot's Oersted Medal Presentation. Using our most advanced instruments and techniques we are able to understand the evidence surrounding the birth and development of our universe and provide a direct image of the embryo universe.

AAPT members were invited by AAAS to participate in a special invited plenary by Albert Gore on global warming. Using the session as an opportunity to urge the scientific community to communicate the urgency of climate change to political leaders and the public, he noted that humanity has little time to change course before risking disastrous global consequences. He welcomed the signs of change in the United States but, he said, scientists must use their knowledge and their respected status in the community to press for broad, swift changes in energy and environmental policies.

"I believe in my heart that we do have the capacity to make this generation one of those generations that changes the course of humankind. The stakes have never been higher," Gore told the scientists, educators, students, and journalists in the audience.

Lila Adair Passes the Gavel to Alex Dickison
The Winter Meeting concluded with the passing of the gavel from President Lila M. Adair to President Alexander K. Dickison. Members expressed appreciation to President Adair for her leadership among emerging opportunities.

Distinguished service citation winners (top to bottom) Paul Hickman, Charles Holbrow, Bob Shurtz, Gary White, and Courtney Willis.

Summer Meeting

Summer Meeting: July 25–29, 2009, University of Michigan Campus,

Ann Arbor, Michigan

David M. Cook, Program Committee Chair

Plenaries: K. C. Cole, *Something Incredibly Wonderful Happens: Frank Oppenheimer and the World He Made Up*, Symposium on Plasma Physics: John Goree, *The Electrical Charge and Motion of Objects Inserted into a Plasma*, Cary Forest, *Turbulent Liquid Metal Dynamo Experiments*
Statistics: There were 1139 attendees, 27 exhibitors, 68 sessions; 32 workshops, 3 tutorials, and 237 posters.

Highlights
The University of Michigan, Ann Arbor campus provided a beautiful setting for the Summer Meeting and practical venue for participants who attended the meeting. Myron Campbell and Candy Styrk, together with many students and faculty from the University of Michigan Physics Department, were gracious hosts and worked tirelessly to facilitate a successful meeting.

Supporting the theme, "Discovering the Universe: From Democritus and Galileo to Fundamental Particles and Cosmology," attendees celebrated the International Year of Astronomy with viewings of the PBS documentary, "400 Years of the Telescope" and a display of the University of Michigan's original Galileo Manuscript, a letter Galileo drafted explaining the usefulness of the telescope. The Manuscript was later used to analyze data and conclude that Galileo had discovered the moons of Jupiter.

The Summer Institute of the Rural PTRA Initiative was held in the UM Physics Department prior to the Summer Meeting. Participants included 80 Physics Teaching Resource Agents (PTRA) who attended an intensive week of workshops presented by their fellow PTRAs and other professional educators. The PTRA program is extending into more rural areas by establishing Rural Centers at colleges and universities throughout the United States with funding from a National Science Foundation grant.

About 215 graduate students and faculty attended the PERC2009 Conference at the end of the AAPT meeting. The Physics Education Research Conference (PERC) is designed to provide a format where Physics Education Researchers can share information and discuss a variety of physics education research issues. PERC2009 was organized by Canadian science educators, Tetyana Antimirova, Nathaniel Lasry, and Marina Milner-Bolotin. Poster sessions and breakout groups were utilized to encourage participation and aid in exchange of ideas. The conference organizers are publishing proceedings from the conference and additional information is available on the conference website http://www.compadre.org/per/conferences/2009/.

A Topical Conference on Advanced Laboratories was also held prior to the Summer Meeting on July 22-25. The meeting featured 17 sessions, including vendor workshops, advanced lab demonstrations, and poster presentations. There were 15 exhibitors and 155 registrants who participated in the Topical Conference.

Workshop and Continuing Education Opportunities
There were 671 registrants for the 35 workshops and tutorial sessions that were offered during the two days prior to the paper presentations. Popular workshops included: Bringing the Universe into Your Classroom, Learning Physics While Practicing Science, Teaching Physics for the First Time, Haunted Physics Laboratories, NIPSTERS: Research Based Conceptual Reasoning Tasks for Introductory Mechanics, Energy in the 21st Century, The Physics of Supernovae, and Piaget, Beyond "Piaget."

Members of the Physics Instructional Research Association (PIRA) presented a two-day lecture demonstration workshop. Designed to cover the complete year of demonstrations needed for a typical physics course, the workshops included approximately 100 demonstrations. The list of demonstrations is online at www.pira-online.org.

No visit to Michigan would be complete without visits to the National Superconducting Cyclotron Laboratory at Michigan State University, the Henry Ford Museum/Greenfield Village, and Detroit with its world-renowned Motown Historical Museum. Summer Meeting attendees enjoyed visiting them all.

The National Superconducting Cyclotron Laboratory at Michigan State University is a world leader in rare isotope research and nuclear science education. NSCL scientists and researchers employ a wide range of tools for conducting advanced research in fundamental nuclear science, nuclear astrophysics, and accelerator physics.

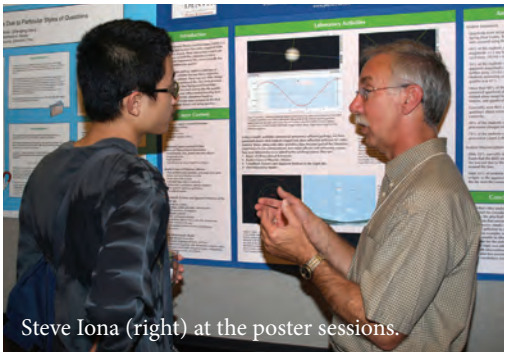
Visitors at the Henry Ford Museum toured a variety of exhibits including Heroes of the Sky, an inspiring reflection on the people and stories from the first 40 years of American aviation and the Automobile in American Life, a look at the ways this invention has influenced and changed a century of life in America; Greenfield Village, an 80-acre step back in time that takes you back to the sights, sounds and sensations of America's past.

Detroit, or Motor Town, is also home to Motown Music. Founded in 1985, the museum's mission is to preserve the legacy of Motown Record Corporation and to educate and motivate people, especially youth, through exhibitions and programs that promote the values of vision, creativity and entrepreneurship. Celebrating 50 years of the Motown sound, the museum exhibits trace the roots of Motown's remarkable story and chronicle its impact on 20th-century popular culture and musical styles.

The Paper Sessions

The meeting offered 151 invited papers, 252 contributed papers, and 237 poster papers, organized into 105 sessions. David Saltzberg, physics consultant for "The Big Bang Theory" presented a very popular session, *A Physicist Scattering on Hollywood*. The committee on the Interests of Senior Physicists hosted *Enabling Us All: The Broad Physics Legacy of H. Richard Crane*. A number of well-attended sessions were devoted to pedagogical issues such as sessions entitled *Giving More than One Test: A Closer Look at Physics Students' Understanding and Reasoning*, *Reforming the Introductory Physics Course for Life Science Majors*, *Issues in Student Problem Solving* (dedicated to the memory of Cornelius Bennhold), *Particle Physics in High Schools*, *The Art and Science of Physics Teaching*, and *Teachers in Residence* (TIR), *Adding Reality to Physics Teacher Preparation Programs*.

Attendees at the 2009 Summer Meeting participated in two AAPT poster sessions and the SPS poster session. PST1 Posters focused on Introductory Labs, Upper Division labs, Pre-High School, Teacher Training, Implementing and Evaluating Curriculum, PER Methods and Assessments, and Conceptual Understanding and Reasoning. PST 2 Posters covered High School Physics, Particle Physics for High School, Physics and Society Education, Physics and Life Science, Introductory Physics, Upper Division, Technology in the Introductory Course, ComPADRE, Teaching with Technology, Evaluation of Technology, Innovations in Teaching Astronomy, Problem Solving, General Topics of Interest in PER, Scientific Reasoning, and Expectations and Gender Issues


Steve Iona (right) at the poster sessions.

The popular Demo Show was held in the University of Michigan's Power Center, a perfect theater venue for the large attendee and local crowd that gathered for this highly interactive experience sponsored by the University of Michigan Physics Department. The show was interactive, offering many opportunities for children in the audience to participate in the demonstrations.

Award and Plenary Sessions

At Monday's Ceremonial Session, Arthur Eisenkraft, University of Massachusetts-Boston, gave the **Robert A. Millikan Medal Lecture**, *Physics for All: From Special Needs to Olympiads*. Eisenkraft developed the Active Physics Curriculum Project and was one of the first supporters of the U.S. Physics Olympics Team. The Millikan Medal recognizes teachers who have made notable and creative contributions to the teaching of physics.

The Klopsteg Memorial Award was presented on Tuesday, July 28 to Lee Smolin, Perimeter Institute for Theoretical Physics, Waterloo, Canada, who delivered the Klopsteg Memorial Lecture, *The Role of the Scientist as a Public Intellectual*. The Klopsteg Award acknowledges outstanding communication of contemporary physics to the general public.

Deborah Roudebush, Oakton High School in Herndon, VA, recipient of the **Excellence in Pre-College Physics Teaching Award**, presented an entertaining and educational address, *What Your Mother Never Told You About…Physics Teaching*. Among the gems shared in this lecture, Roudebush said, "The one thing that I was sure of was that physics was for everyone, not just the elite students. The rest I had to figure out along the way. The most difficult task for a new teacher is to learn to teach in a manner differently than he or she was taught. In my schooling, the emphasis was on the mathematical models of physics. In reality, the conceptual models must be in place to serve as the underpinnings for the mathematical models.

Physics must be experiential. In this day of diverse student populations, leading with an exploration gives the students a common experience on which to build vocabulary and concepts. The perfect directions do not exist! Students can rise to the challenge and learn to thrive when given a research question and access to equipment. They learn to reason their way to determine which data must be collected, what the data will tell them about the research question, and how the outcome may change their working model of the content under study.

Students must learn to deal with the frustration of figuring things out. Many students arrive at the classroom door with tremendous experience as successful passive learners. Our job as physics teachers is to shake them up—provide them with interesting problems to solve and enough support to keep the frustration from overwhelming them, causing them to shut down. The take away from this address was, "The art of physics teaching is managing the struggle. The role of physics teaching is facilitation. The role of students is active engagement."

The **Excellence in Undergraduate Physics Teaching Award** was presented to Mario Belloni, Davidson College, Davidson, NC. His address, *Using Technology to Increase Student Engagement Inside and Outside of the Classroom*, opened our eyes and minds to the possibilities technology brings to the teacher's toolbox.

In recent years, physics education research has documented that students who are in active learning environments learn more than students in more passive learning environments. With the creation of numerous PER-based and inspired interactive pedagogies and with digital libraries such as comPADRE providing high-quality material to teachers, the inclusion of these new pedagogies and resources is easier than it has ever been. Even with all these materials, it is still the personal touch and expertise of a teacher that is required to meld these materials and methods together.

Distinguished Service Citations were presented to (top to bottom) Alan Gibson, Dave Maiullo, Bruce Mason, Mary Winn, and Mel Steinberg (posthumously, inset), with Bob Morse accepting.

Exhibits and Demos
The 2009 High School Physics Photo Contest was a very popular attraction with attendees voting on the top 100 semi-finalist photos and essays. The entries were conveniently located just outside of the main exhibit hall. Vernier Software & Technology, long-time sponsor of the photo contest, provided the prizes for the winners (http://www.aapt.org/Programs/contests/pc09.cfm).

The exhibits were displayed in three separate halls where vendors displayed their products. Special events such as the Welcome Reception, Happy Hour, and an Ice Cream Social provided a good opportunity to meet colleagues and browse the exhibit halls. The poster sessions were displayed throughout the day, giving attendees more time to browse the presentations.

The AAPT Committee on Apparatus conducted the annual apparatus competition. Pictures and descriptions of the entries are available at http://www.aapt.org/programs/contests/apparatus.cfm. The apparatus competition entries were on display during the meeting in the PIRA resource room. PASCO Scientific Company provides prizes for the apparatus competition.

In Conclusion
In spite of the summer thunderstorm, attendees at the Summer Picnic enjoyed a Carillon Bell Tower Concert and the "Open Mike" talents of gifted physicist musicians and comedians before heading out for the Demonstration Show.

As the events of the 2009 Summer Meeting unfolded throughout the week, the overarching theme was that physics educators teach students, not physics, and they reach them one at a time. We send a huge thank you to all of the volunteers and sponsors who made the meeting in Ann Arbor so memorable and successful

Archival copies of the meeting program are available on the AAPT website.

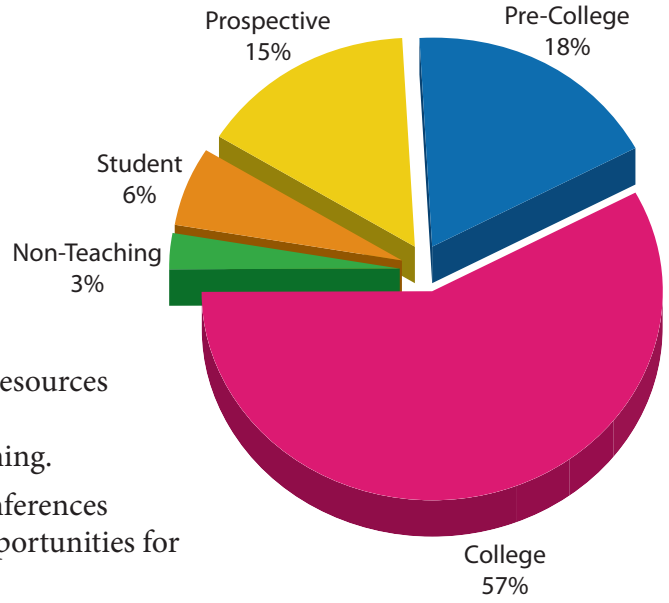
Meeting Statistics

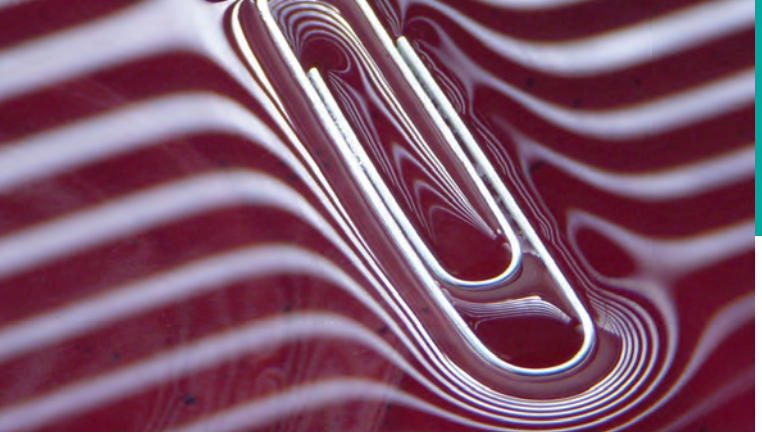
More than 1000 physics educators, researchers, and students attend the Annual Summer Meeting.

These National Meetings, held each winter and summer, are opportunities for members, colleagues, and future physicists from around the world to:

- participate in physics workshops
- meet and greet other physics educators
- form networks nationally and locally
- engage exhibitors and learn about the latest physics resources
- discuss innovations in teaching methods
- share the results of research about teaching and learning.

AAPT also hosts or supports smaller workshops and conferences and symposia throughout the year to provide further opportunities for professional development and knowledge sharing.





Workshops and Programs

Workshop for New Physics and Astronomy Faculty

June 25-28 and Nov. 12-15, 2009 at the American Center for Physics

AAPT, in conjunction with the American Astronomical Society (AAS) and the American Physical Society (APS), held two workshops for new physics and astronomy faculty members at the American Center for Physics. These workshops helped nearly 200 new faculty understand how students learn physics and astronomy and suggested how this information can impact a new professor's teaching methods. The workshops are intended for faculty in the first few years of their initial tenure-track appointment at a four-year college or university.

Physics Teacher Resource Agents (AAPT/PTRA) Program

In 2009 the PTRA Program provided leadership in a number of professional development projects in Arkansas, District of Columbia, Idaho, Georgia, North Carolina and Texas supported by Math Science Partnerships grants; in Maryland by an Improving Teacher Quality grant from the Maryland Higher Education commission, and in Virginia supported by a Toyota Corporation Grant.

The AAPT/PTRA Project also supported section mini-grants in Hawaii, Illinois, Kentucky, New York, and Texas.

2009 PTRA Directors:

George Amann, Jan Mader, Karen Jo Matsler, Jim Nelson

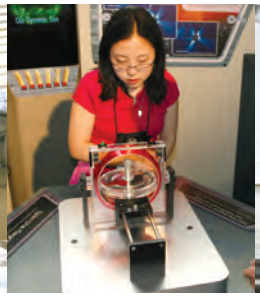
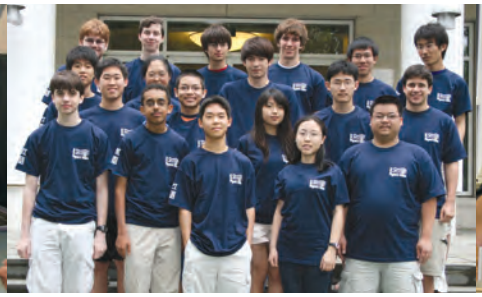
2009 United States Physics Team

Twenty students from across the U.S. emerged through a rigorous exam process that began in January with approximately 4,000 students who participated in the Fnet=ma exam to become the 2009 U.S. Physics Team (http://www.aapt.org/physicsteam/team.cfm). These students continued to train at a 10-day Training Camp for the mentally grueling exams and lab tests they faced at the 40th International Physics Olympiad, held July 12-19 in Merida Yucatan, Mexico. The 2009 Training Camp included visits to NASA and to the Mexican Embassy.

U.S. Team Members
Yishun Dong—Columbus OH, Yale Fan—Portland OR, David Field—Andover MA, Justin Holmgren—Palo Alto CA, Patrick Hurst—Aurora IL, Robert Kastner—Basking Ridge NJ, Brian Kong—Milton MA, Kevin Lang—Charlotte NC, Dan Li—Alexandria VA, Patricia Li—San Jose, CA, Bowei Liu—Fremont CA, Jenny Lu—Southbury CT, Marianna Mao—Fremont CA, Anand Natarajan—San Jose CA, Joshua Oreman—Los Angeles CA, :Thomas Schultz—Boston MA, Allen Yuan—Beverly Hills MI, Yunfan Zhang—Andover MA, Andrew Zhou—San Jose CA
Co-Academic Directors: Robert Shurtz, Paul Stanley
Coaches: David Fallest, David Jones, Andrew Lin,
Junior Coach: Elena Yudovina
Lab Coaches: Warren Turner, Safa Motesharrei

Bringing Home the Gold: U.S. Physics Team Wins Four Gold Medals and One Silver Medal

The traveling team, from left to right are, Anand Nataranjan, Bowei Liu, David Field, Marianna Mao, and Joshua Oreman. The proud coaches stand behind the students and are, from left to right, Warren Turner and Paul Stanley.


AAPT Physics Bowl

This year there were almost 4500 students participating from approximately 225 schools across the United States and Canada as well as a school in China. Michael C. Faleski served as the PhysicsBowl Academic Coordinator.

AAPT PHYSICS EDUCATION American Association of Physics Teachers PHYSICSBOWL 2009

The following prizes are awarded:

<u>To schools</u>

- 1st place in each region & division: $100 gift certificate from Frey Scientific and $25 AAPT Store gift certificate
- 2nd place in each region & division $50 gift certificate from Vernier Software & Technology and $25 AAPT Store gift certificate

<u>To students</u>

- 1st place in each region & division, the book *Chasing the Rainbow* from Robert Greenler.
- TI-30 XS MultiView Scientific Calculator awarded to the students and schools placing first and second in each region and division from Texas Instruments.
- T-shirts awarded to the five top students in the top scoring school in each region from AAPT

AAPT Examinations Editorial Board for Physics Bowl
Thomas J. Senior, Michael C. Faleski, James O. Vermillion

Collaborative Projects

Team America Rocketry Challenge

AAPT is proud to be the sole educational partner for the world's largest rocket contest, the Team America Rocketry Challenge (TARC). TARC is also sponsored by the Aerospace Industries Association (AIA), the National Association of Rocketry (NAR), NASA, the Defense Department, and AIA member companies. TARC is an opportunity for science enthusiasts to work together as teams to build and launch rockets, with a chance to win more than $60,000 in scholarships and prizes. ***Winners:*** http://www.rocketcontest.org/scores08.cfm. AAPT sponsors the TARC Lesson Plan Contest (http://www.aapt.org/Contests/rocket.cfm).

International Science and Engineering Fair

May 15, 2009 in Reno, Nevada

AAPT/APS Special Awards in Physics and Astronomy at the International Science and Engineering Fair (ISEF) were announced during the awards ceremony at the conclusion of the fair. The competition, held in a different city each May, is the only international science project competition for students in grades 9 through 12. Students qualify to compete by participating in school, local, regional, and/or state science fairs. Lila Adair chaired a team of Special Awards judges from educational institutions in Georgia.

Top award winners receive a one-year AAPT and APS student membership, a certificate from both AAPT and APS, as well as subscriptions to AAPT's *The Physics Teacher* and other APS journals. Each sponsoring teacher of a student who receives an AAPT and APS award also receives a certificate.

First Award of $1,200: ***A Study of Chaotic Behavior Utilizing the Non-Ohmic Properties of the P-N Junction***
Michael Anthony Batista, Melbourne Central Catholic High School, Melbourne, FL

Second Award of $800: ***Intensity and Temperature Variance in Sonoluminescence***
Lyric Elizabeth Gillett, Cornerstone High Homeschool, Houston, TX

Third Award of $500: ***Dancing Water Droplets***
Te Hsin Tsui, National Hsinchu Girls' Senior High School, Hsinchu, Taiwan, Chinese Taipei

Certificate of Honorable Mention
A Quantum Computational Approach to the Atomic Many-Body Problem, Yale Wang Fan, The Catlin Gabel School, Portland, OR
SQIF Setup for Measurements of Extremely Low Absolute Magnetic Fields, Anne Yuri Polyakov, Ward Melville High School, East Setauket, NY
Novel Characterizations of the Static and Kinetic Behavior of Liquid Marbles: A Potential Utility in Digital Microfluidics, Nilesh Tripuraneni, 17, Clovis West High School, Fresno, CA

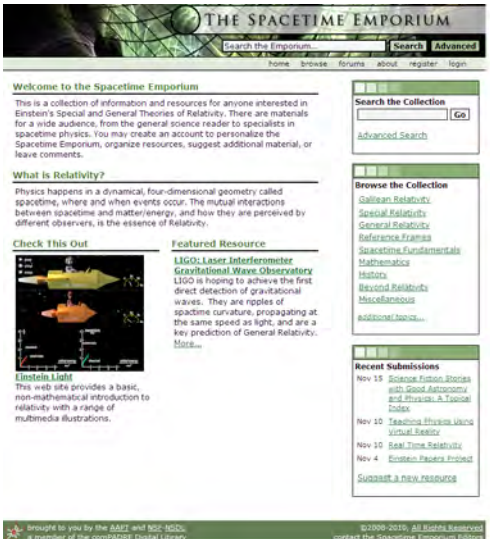
Physics Days at NSTA

Local AAPT Sections hosted Physics Day at nearby NSTA area meetings held in Phoenix, AZ, Minneapolis, MN, and Charlotte, NC.

The Physics Day programs offered a full day of physics content at each NSTA area conference. Physics Day consists of presentations on physics topics of current interest, physics demonstrations for the pre-college classroom, and a make 'n take session where participants can construct a piece of physics apparatus for use as a demonstration or laboratory experiment. AAPT sent a representative to each event, shared appropriate materials, and recruited science teachers as members of the association.

ComPADRE

The AAPT is the lead institution in a collaboration supporting The ComPADRE Pathway of the NSF National STEM Digital Library. ComPADRE is a network of free online resource collections supporting faculty, students, and teachers in Physics and Astronomy Education.



comPADRE
Resources for Physics & Astronomy Education

Additions made to ComPADRE in 2009 include:

- Physics Careers, helping present the opportunities provided by a degree in physics,
- The Spacetime Emporium for education resources in relativity,
- A new Nucleus for undergraduates, highlighting videos, news, and opportunities, and
- A new PTEC website, in collaboration with the APS, for the teacher education coalition.

Other Collections hosted by ComPADRE include:

- The PSRC, a broad resource collection and the foundation of ComPADRE
- The Physics Front, editor-selected and organized resources for K-12 teachers
- The Physics Source, resources to help teachers of introductory undergraduate physics
- Physics to Go, an online magazine of science images and activities for all
- Advanced Labs, a collection of lab ideas and support of junior and senior labs
- Partnerships are helping ComPADRE grow. ComPADRE is hosting:
- Open Source Physics, adaptable, model-based physics and astronomy curricula
- The Physics Classroom, a widely used online introductory physics tutorial
- PER-Central, a web portal for PER researchers, users, and the annual PERC
- STP, statistical physics material organized around an online text and computer models

Physics Education Research (PER)

PERC 2009—Ann Arbor, Michigan

Theme: *Physics Education Research across Paradigms*

202 attendees

Invited sessions:

"Bridging Cognitive and Neural Aspects of Classroom Learning"
Michael I. Posner, Sackler Institute for Developmental Psychobiology

"Causality in Pieces: The Construction of Causal Schemes "
Andrea A. diSessa, University of California at Berkeley

"Moving Between Discourses: From learning-as-acquisition to learning-as-participation"
Anna Sfard, Michigan State University

"The Biology of Physics: What the brain reveals about our understanding of the physical world "
Kevin Niall Dunbar, University of Toronto

PER Leadership Organizing Council
Rachel E. Scherr, Chair
Jose P. Mestre
Noah Finkelstein
Valerie K. Otero
John R. Thompson
Paula Heron, Ex Officio

PhysTEC

Physics Teacher Education Coalition

Eight years ago, the American Physical Society (APS), the American Association of Physics Teachers (AAPT), and the American Institute of Physics (AIP), with NSF support, jointly launched PhysTEC to help U.S. universities alleviate the nation's critical physics teacher shortages. PhysTEC institutions have achieved a number of successes, including

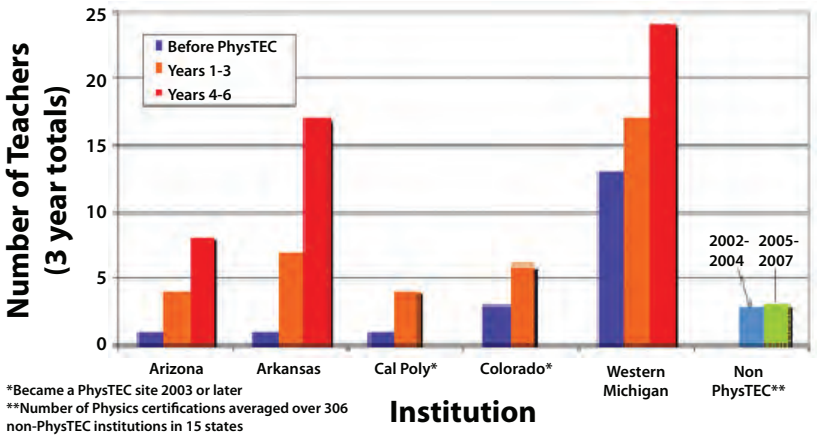
- Greatly increasing the number of high school physics teachers graduating from their programs, as much as tenfold in some cases;
- Providing for prospective teachers, early teaching experiences that develop their pedagogical abilities and encourage them to consider a teaching career;
- Using master teachers to provide critical mentoring support to new graduates and develop bridges between physics departments, education schools, and local K-12 school districts.
- Transforming science and teaching methods courses for future physics and physical science teachers to help them learn and teach in an interactive and engaging way;
- Securing allocation of substantial departmental and institutional resources for sustaining teacher preparation programs;
- Measuring project outcomes and disseminating results through publications, presentations, conferences, and workshops.

PhysTEC began with six universities and has expanded to a total of 14 sites, which are chosen through a peer-reviewed solicitation that considers the applicant's potential to increase the number of teachers who graduate and develop programs that will serve as national models. Evidence of collaboration between physics and education faculty is another important criterion.

Increase

In response to a request for proposals, the project received 45 proposals for four available slots. "The physics community is clearly showing broad interest in teacher preparation," said Ted Hodapp, director of education and diversity for APS. "If there were funding for 10 times as many institutions to replicate PhysTEC's efforts, major progress could be made toward putting highly qualified teachers in every one of our country's physics classroom. With today's highly competitive technical workplace, the need for physics teachers has never been greater."

Increase in Physics Teachers Educated at PhysTEC Institutions



*Became a PhysTEC site 2003 or later
**Number of Physics certifications averaged over 306 non-PhysTEC institutions in 15 states

In 2003, the three physics societies launched a parallel effort, also called the Physics Teacher Education Coalition, but known as PTEC. Membership in PTEC is free and open to any institution that prepares physics teachers and that endorses a statement supporting the education of teachers in physics departments. As of April 2009, over 130 institutions have joined PTEC, and faculty from many of these institutions attend an annual conference designed to promote and disseminate best practices in physics teacher education.

High School Physics Photo Contest

The High School Physics Photo Contest is open to high school students in grades 9-12 (or equivalent international grade level). Photos may be entered in one of the categories described below, and are judged on the quality of the photo and the accuracy of the physics in the explanation that accompanies the photograph. Out of approximately 900 submissions, the 100 finalist photos were selected, displayed, and judged during the 2009 Summer Meeting.

See http://www.aapt.org/Programs/contests/pc09.cfm for information on the following overall winners of 2009.

Categories

Natural photos are those that involve everyday situations that may demonstrate a variety of physics concepts. Any spontaneous event is considered natural.

Contrived photos are those that are set up to show a particular physics concept or related set of concepts. Contrived photos represent non-spontaneous events.

Photos with multiple images or other computer manipulation will be placed in a separate category. They may be displayed at the national meeting and judged for Special Recognition ribbons, but not for prizes.

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Awards and Grants

Awards and Service Citations

Floyd K. Richtmyer Memorial Award
2009 Awardee: Vera C. Rubin, senior fellow, Carnegie Institution of Washington
Rotating Galaxies and Dark Matter

The Richtmyer Memorial Award recognizes outstanding contributions to physics and their communication to physics educators.
Vera Rubin is an observational astronomer who has studied the motions of gas and stars in galaxies and motions of galaxies in the universe for 75% of her life. Her work was influential in discovering that most of the matter in the universe is dark. She is a member of the National Academy of Sciences, and the Pontifical Academy of Sciences. President Clinton awarded her the National Medal of Science in 1993.

Paul E. Klopsteg Memorial Award
2009 Awardee: Lee Smolin, Perimeter Institute for Theoretical Physics, Waterloo, Canada
The Role of the Scientist as a Public Intellectual

The Klopsteg Memorial Award acknowledges outstanding contributions in the communication of the excitement of contemporary physics to the general public.
Lee Smolin, a theoretical physicist, is a founding and senior faculty member at Perimeter Institute for Theoretical Physics in Waterloo, Canada. He is also Adjunct Professor of Physics at the University of Waterloo. He is the author of more than 140 scientific papers and has made major contributions to the quantum theory of gravity, being a co-inventor of loop quantum gravity and deformed special relativity. He has also worked in cosmology and is the inventor of a theory called cosmological natural selection, which applies a Darwinian methodology to the question of how the laws of physics are chosen.

Excellence in Undergraduate Physics Teaching Award
2009 Awardee: Mario Belloni, Davidson College, Davidson, NC
Using Technology to Increase Student Engagement Inside and Outside of the Classroom

This award recognizes outstanding achievement in teaching undergraduate physics.
At Davidson College, Mario Belloni is well known as author, public speaker, researcher, workshop leader, motivator of students, award winning professor, and an innovator in the use of technology for teaching Physics. He received the AAPT Distinguished Service Citation in 2006 and has served as a member of the Planning Committee for the Section Representative/ Area Chair Governance in 2007.

Excellence in Pre-College Physics Teaching Award
2009 Awardee: Deborah Roudebush, Oakton High School, Herndon, VA
What Your Mother Never Told You About... Physics Teaching

Award recognizes outstanding achievement in teaching pre-college physics.
Deborah Roudebush has served as an AAPT PTRA since 1992, participated in the D.C. Urban initiative, served as Rural Initiative–James Madison University Lead Teacher, and D.C. MSP Lead Teacher in 2008. She has been active in QuarkNet since 2000, serving as Teaching & Learning Fellow with QuarkNet centers. She was recognized as a Presidential Awardee for Excellence in Science Teaching in 2001.

AAPT Distinguished Service Citations
Winter Meeting 2009: Paul Hickman, Charles, Holbrow, Bob Shurtz, Gary White, Courtney Willis
Summer Meeting 2009: Alan Gibson, David Maiullo, Bruce Mason, Mary Winn, Mel Steinberg (posthumous)
The program recognizes AAPT members for their exceptional contributions (e.g., committee, section, or editorial work) to physics education.

Medals

Hans Christian Oersted Medal

2009 Awardee: George F. Smoot III, Lawrence Berkeley Laboratory and University of California, Berkeley

The History and Fate of the Universe

The Oersted Medal recognizes those who have had an outstanding, widespread, and lasting impact on the teaching of physics.

George Smoot has done forefront work in cosmology using microwave radiation detectors in airplanes, high-altitude balloons, and satellites. He is best known for his analysis of data gathered by the COBE satellite. His differential microwave radiometer enabled him to detect temperature differences as small as 0.001 K. His work provided the first evidence of structure in the early Universe and smaller ripples in the temperature of the cosmic background radiation, consistent with Big Bang theory.

Robert A. Millikan Medal

2009 Awardee: Arthur Eisenkraft, University of Massachusetts Boston

Physics for All: From Special Needs to Olympiads

The Robert A Millikan Medal recognizes those who have made outstanding scholarly contributions to physics education.

Arthur Eisenkraft is Distinguished Professor of Science Education and Director of the Center of Science and Math in Context (COSMIC), at UMass Boston. He and AAPT Executive Director Jack Wilson created the process that identified and supported the first U.S. Physics Olympics Team to compete in the International Physics Olympiad, in 1986. He was one of the originators of *Quantum* magazine, and also developed the Active Physics curriculum project.

Melba Newell Phillips Medal

The medal is presented in recognition of creative leadership and dedicated service that have resulted in exceptional contributions to AAPT. It is presented only occasionally and was not presented in 2009.

Grants and Scholarships

AAPT Venture Fund

The Venture fund is a resource for AAPT members, created to promote the development of innovative teaching products and services for physics and other sciences. The fund provides one project up to $25,000 in total support. The Venture Fund focuses on assuring a marketable product and its timely availability to the teaching community.
http://www.aapt.org/Grants/venturefund.cfm

Barbara Lotze Scholarship for Future Physics Teachers

AAPT awards this scholarship to high school seniors or undergraduate students who plan to become physics teachers and who are U.S. citizens attending a U.S. school. Two successful applicants will each receive a stipend of up to $2,000.
http://www.aapt.org/Grants/lotze.cfm

Frederick & Florence Bauder Endowment

This endowment makes it possible for AAPT members to receive funding to support special activities in the area of physics teaching. Activities include local workshops, grant projects, distribution of innovative apparatus for physics teaching, etc.
http://www.aapt.org/Grants/bauderfund.cfm

High School Physics Teacher Grant

The grant(s) are given each year to teachers whose proposal meets the goal of the grant. That is, the procedure should result in better teaching practice, student understanding and interest, and/or increased enrollment. Awardees will receive anywhere from $100 to $500 per award.
http://www.aapt.org/Grants/hsgrant.cfm

Harold Q. & Charlotte Mae Fuller Fund

This endowment fund was created to enhance the internationalization of AAPT membership and is intended to benefit physics teachers in developing countries.
The individual(s) who are selected will have their full membership dues paid and receive *The Physics Teacher* (or the *American Journal of Physics*, if they prefer) for a period of two years.
http://www.aapt.org/Grants/fullerfund.cfm

Fundraising

Invest in Physics Education

http://www.aapt.org/donations

The American Association of Physics Teachers thanks their generous corporate partners for their support of 2009 activities.
Sponsorship levels for recognition with AAPT are calculated based on the value of meeting sponsorship opportunities and/or from other AAPT sponsored events. Exhibit fees do count towards sponsorship contribution!

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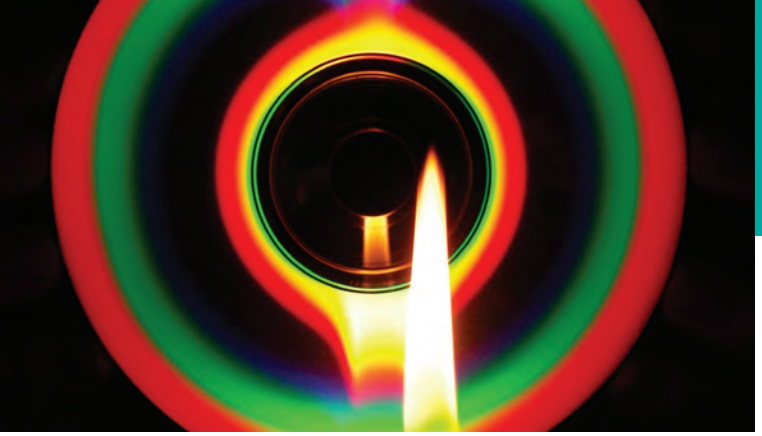

Committee Contributions

Committees are essential to AAPT. In addition to committees that advise and oversee operations, such as Publications, Awards, and Budget, there are those that focus on advancing physics education. There are currently 18 Area Committees, each with nine members who hold staggered three-year terms: One new member is appointed each year by the Nominating Committee and two are appointed by the incoming president. Their responsibilities range from developing academic content for the meetings to acting as stewards for their particular area of interest.

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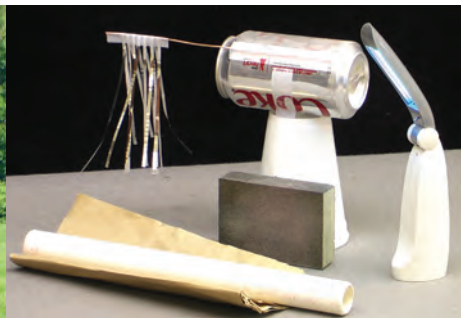

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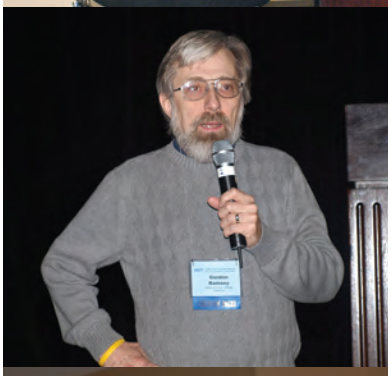

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Fifty-one local sections increase the impact of AAPT programs and resources.

AAPT Sections spread from Alaska and Canada to Puerto Rico. Some sections follow geopolitical boundaries, serving a province, a state or a territory. Others may serve part of a state or areas as large as six combined states. AAPT members' activity in their local sections strengthens physics education. Sections provide an outstanding opportunity to interact and network with other local physics educators. Acting together we are much stronger and have a bigger impact on physics education.

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The American Association of Physics Teachers, Inc.
Audited Balance Sheet
Year Ended December 31, 2009
(With comparative totals for 2008)

	December 2009	December 2008
ASSETS		
Cash and Cash Equivalents	$700,024	$423,124
Investments	3,236,556	3,294,138
Receivables, Net		
Grants	158,366	188,151
Due from affiliate	35,000	41,044
Membership	6,026	25,309
Other	9,655	9,655
Inventory	129,033	146,094
Prepaid Expenses	89,272	43,969
Investment in ACP	47,487	7,622
Property and Equipment, Net	53,793	120,808
TOTAL ASSETS	$4,465,212	$4,299,914
LIABILITIES & NET ASSETS		
LIABILITIES		
Accounts Payable and Accrued Expenses	372,283	554,670
Accrued Payroll and Related Liabilities	394,534	460,233
Unearned Revenue	2,089,931	1,558,914
Capital Lease Obligation	6,610	14,610
Deferred Compensation Obligation	38,896	74,986
Accrued Postretirement Benefit Obligation	347,832	359,197
TOTAL LIABILITIES	$3,250,086	$3,022,610
NET ASSETS		
Unrestricted		
Undesignated	424,496	719,647
Board designated	184,415	125,972
	608,911	845,619
Temporarily Restricted	174,530	-
Permanently Restricted	431,685	431,685
	1,215,126	1,277,304
TOTAL LIABILITIES & NET ASSETS	**$4,465,212**	**$4,299,914**

The American Association of Physics Teachers, Inc.
Audited Statement of Activities
Year Ended December 31, 2009
(With Comparative Totals for 2008)

	Unrestricted					
	Undesignated	Board Designated	Temporary Restricted	Permanently Restricted	2009 Total	2008 Total
Revenue & Support:						
American Journal of Physics	$1,419,540	-	-	-	$1,419,540	$1,251,994
The Physics Teacher	881,933	-	-	-	881,933	811,584
Investment Income (Loss)	513,705	59,026	121,277	-	694,008	(1,428,295)
Other Publications	18,343	-	-	-	18,343	150,929
Meetings, workshops and projects	827,845	-	-	-	827,845	549,215
Membership	594,735	-	-	-	594,735	719,397
Federal Grants	951,713	-	-	-	951,713	1,177,761
Contributions	62,882	8,869	-	-	71,751	243,097
International Physics Olympiad	30,722	-	-	-	30,722	139,061
Share in earnings of investment in ACP	39,865	-	-	-	39,865	154,380
Miscellaneous Income	21,542	-	-	-	21,542	1,388
Net assets released from restrictions	9,452	(9,452)	-	-	-	-
Total revenue and support	5,372,277	58,443	121,277	-	5,551,999	3,770,511
Expenses:						
American Journal of Physics	796,888	-	-	-	796,888	696,444
The Physics Teacher	716,549	-	-	-	716,549	748,840
Other Publications	658,402	-	-	-	658,402	899,667
Meetings, workshops and projects	1,175,040	-	-	-	1,175,040	1,206,475
Memberships	849,516	-	-	-	849,516	846,187
Federal Grants	1,048,712	-	-	-	1,048,712	1,456,316
General and administrative	274,309	-	-	-	274,309	517,680
Fundraising	94,759	-	-	-	94,759	84,581
Total Expenses	5,614,175	-		-	5,614,175	6,456,190
Change in net assets before effect of adoption of SFAS No. 158	-	-	-	-	-	(2,685,679)
Effect of adoption of recognition provision of SFAS No. 158	-	-	-	-	-	(124,424)
Change in net assets	(241,898)	58,443	121,277	-	(62,178)	(2,810,103)
Net Assets:						
Beginning	719,647	125,972	-	431,685	1,277,304	4,087,407
Transfers	(53,253)	-	53,253	-	-	-
Ending	$424,496	$184,415	$174,530	$431,685	$1,215,126	$1,277,304

The American Association of Physics Teachers, Inc.
Audited Schedule of Functional Expenses
Year Ended December 31, 2009
(With Comparative Totals for 2008)

	Program Services	General & Administrative	Fundraising	2009 Total	2008 Total
Compensation expense	$ 1,273,623	$ 803,188	$ 58,878	$ 2,135,689	$ 2,516,074
Editorial office expense	367,510	-	-	367,510	500,253
Publication costs	274,720	-	-	274,720	305,421
Travel	170,914	100,633	453	271,000	484,847
Debt Service	-	251,355	-	251,355	252,855
Participant travel and stipends	288,797	-	-	288,797	323,966
Consultants, contracts and temporary	188,036	5,827	-	193,863	269,365
Postage, packaging and shipping	189,330	2,256	2,811	194,397	195,912
Computer supplies and maintenance	7,519	180,599	-	188,118	157,947
Rental operating expenses	-	174,594	-	174,594	189,637
Audio/visual	159,599	2,709	-	162,308	52,948
Online journal services	146,580	-	-	146,580	97,977
Professional Fees	33,912	68,967	-	102,879	179,517
Conferences, meetings, and workshops	91,097	3,508	-	94,605	60,807
Depreciation	-	84,351	-	84,351	83,766
Exhibit and meeting expenses	80,385	-	-	80,385	21,810
Honoraria	74,936	-	-	74,936	135,173
Photocopying and printing	67,840	7,745	737	76,322	74,492
Publishing services	54,318	1	-	54,319	55,120
Bank fees	287	53,746	-	54,033	49,035
Dues and memberships	52,164	1,171	72	53,407	63,495
Advertising	52,217	-	186	52,403	78,520
Office services	-	45,822	-	45,822	45,557
Materials and supplies	36,506	2,969	80	39,555	52,843
Awards	39,901	553	-	40,454	56,038
Other facility costs	27,752	2,780	-	30,532	14,596
Insurance	310	19,602	-	19,912	25,557
Investment expenses	-	15,394	-	15,394	19,241
Telephone	3,381	10,393	-	13,774	20,433
Storage	8,794	-	-	8,794	20,667
Equipment and maintenance	6,712	145	-	6,857	162
Security	-	4,050	-	4,050	4,972
Royalty expense	-	813	-	813	2,467
Other	2,527	8,113	7	10,647	44,720
Allocation of indirect costs	1,545,440	(1,576,975)	31,535	-	-
Total expenses	**$ 5,245,107**	**$ 274,309**	**$ 94,759**	**$ 5,614,175**	**$ 6,456,190**

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