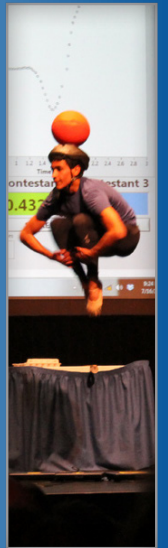




AMERICAN ASSOCIATION OF PHYSICS TEACHERS  
2013 ANNUAL REPORT



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Beth A. Cunningham

# 2013 in Review

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# President

GAY B. STEWART



In this AAPT 2013 Annual Report you will find information on many of the exciting things going on in our Association. I am not going to attempt to summarize it here, but invite you to read further. I wish to speak to what an incredible honor and experience it has been to serve as president, right from accepting the gavel from Jill Marshall! Previous presidents have pointed out that our society for physics education should guide the way. This has not changed. The population needs to be “STEM-ready”, as more of the most basic jobs require facility with technology, and new jobs require much deeper understanding of science and technology than ever before. Economic forecasts show a need for our country to produce about 1,000,000 more college graduates in STEM fields in the next decade than we are currently projected to produce.

College is not the only place where there is pressure to improve STEM education. The newly redesigned Advanced Placement Physics 1 and 2 have benefitted from a strong presence of AAPT leadership at almost every step along the redesign process, and are finally coming to a classroom near you if science supervisors can be made to understand why an inquiry-driven, conceptually rich course is really the way to go. The Next Generation Science Standards (NGSS) are being implemented as, or having an impact on, many state standards. The NGSS are not a curriculum, but designed to provide an outline from which curriculum developers, professional development providers, teacher preparation programs, and test developers can work to common purpose. Although these are to be national standards, there is

“The population needs to be ‘STEM-ready’,  
...jobs... require much deeper  
understanding of science and technology  
than ever before.”

little national voice in their implementation. AAPT, as the sole organization representing teachers of physics from all educational levels, has the duty to take a leadership role in this process, and has been involved in revision to these standards to bring them closer to a vision consistent with what we know about how people learn. To affect implementation, we have to work on the local level. Physics is in the front lines in discipline-based educational research! Our membership has the experience and expertise to impact these

implementations. Our Sections can help take the lead. While our Sections are actually autonomous organizations, AAPT is working with the Sections to provide an infrastructure to let them better coordinate their actions. Section Representatives are strongly involved in our Association’s governance, and we hope to have more members in common. We are also working to strengthen the connection between our Sections and Area Committees. The Area Committees are sources of expertise in a number of areas important to AAPT’s goals. (I invite you to attend one or more Area Committee meetings at the next National meeting!)

We become stronger by welcoming as members all physicists who value a sound physics education. We must work in concert with our sister organizations, such as APS, that share our concerns and wish to help us in improving physics education. “Enhancing the understanding and appreciation of physics through teaching” is not a competition. It is a worthy effort that will take many partners working together to achieve. Our goal is getting there, but we cannot do it on our own, nor do we need to – we just need to make sure we are involved. We do stand as the only membership organization that strongly represents the entire educational continuum. Our newly created AAPT Fellowships will help bring recognition to our dedicated members at all levels.

Our national office is acting to increase our visibility in Congress, the administration, and the general public as the leading organization with expertise in physics education. We have an Executive Officer (EO), Beth Cunningham, who is committed to working with the Executive Board to think strategically for our Association, and to implement AAPT’s strategic plan. Prior to my joining the Board, we had a tumultuous period where we had numerous turnovers in executive officers. Since the volunteer

leadership also routinely rotates, this does have an impact on our effectiveness as an organization and our institutional memory. David Cook created documents to help the volunteer leadership carry out its tasks. I hope to provide a document to help us understand our fiduciary responsibilities so AAPT may maintain its financial health. Being EO of AAPT is a big job! We added Associate EO Robert C. (Bob) Hilborn, with long-time ties to the Association, to work with Beth to support AAPT's educational programs. Aside from trying to have the necessary impact on national and state policy, journals get published, meetings are planned, outreach continues, and members' needs are served. We are providing leadership, active in a range of activities, and ensuring the financial stability of our Association, while working with a staff that is smaller and busier than ever! In an office doing so much with a lean staff, mistakes will happen. When they do, we need to be supportive and give constructive feedback.

Aside from a year that has passed by in a blur of activity, it has been a very emotional year for me, for many of us. Two of our Executive Board members, who had long served AAPT and been influential

"We become stronger by welcoming as members all physicists who value a sound physics education."

mentors for me almost since the day I joined, were lost. On April 30, Paul Zitzewitz passed away. He was an active member of the Michigan Section of AAPT as well as the national Association. He had also been a member and served as chair of the Physics in Pre-High School Area Committee and endowed an AAPT award to recognize particularly the K-12 physics teaching community. He was serving his second term as treasurer. Mary Beth Monroe was lost to us on August 27. She was President Elect at the time,

and was appointed AAPT President *pro tempore* for one week while I took a leave of absence, starting on August 9, 2013. Mary Beth had taken many roles in AAPT, Texas Section and national, from serving as Secretary, chairing numerous committees including our Governance Review Committee, serving on four Area Committees, the editorial board of *The Physics Teacher*, and representing two-year colleges (TYCs) both on the Executive Board and as a principal investigator on two NSF-funded AAPT/TYC initiatives. I must admit, I had been very surprised to realize that Mary Beth had not served as president before me, and I was so looking forward to presenting the gavel to the woman who had exemplified the supportive spirit of AAPT for me. Because of the timing, it was Past President Jill Marshall, accompanied by Tom O'Kuma and Karen Jo Matsler, who were able to visit her in hospice on August 10 to present her with the gavel. Steve Iona stepped in to fill the breach in both of these losses, accepting the appointment of the Executive Board to serve out Paul's term as treasurer, and then standing for election as President to fill the remainder of Mary Beth's term. It was into his capable hands that I passed the gavel and he is already serving as a strong leader for AAPT.

I want to close with a quote from Ken Heller's letter in this same venue not quite 10 years ago. He is another one my AAPT mentors, and had much to do with convincing me to volunteer for a leadership role in AAPT. "We support our own values by being advocates for an educational system that insists on elementary school teachers equipped with a strong background and interest in science and mathematics; high school physics teachers with a deep knowledge of physics who utilize effective curricula and pedagogy; undergraduate physics instructors who encourage their students to enter the teaching

"Our national office is acting to increase our visibility . . . as the leading organization with expertise in physics education."

profession and whose teaching reflects effective teaching techniques; and graduate instructors who view effective teaching as one of the important attributes of anyone with an advanced degree in physics. Above all, we must promote the support of teachers so that today's students consider teaching an attractive career choice." As he did, I will close by calling on you to get involved in our diverse and exciting Association. Nominate yourself or others for the Executive Board or Area Committees using the online form

available at <http://www.aapt.org/aboutaapt/nominate.cfm>. Attend your Section meetings and participate in their decisions and actions (<http://www.aapt.org/Sections/Map.cfm>). Make sure the best efforts of our community are awarded by nominating colleagues for AAPT's rich array of awards. Help us to endow the award about which you are most passionate. Help your Association to help you improve physics education.

Sincerely yours,



# Executive Officer's 2013 Annual Report

BETH A. CUNNINGHAM



We have had a very busy year in the Executive Office. This year continues the success of AAPT's finances. A new strategic plan was developed and approved by the Board. The national meetings, the workshops for new university and two-year college faculty, the PTRA Institute, US Physics Olympiad, and many of AAPT's programs continue to be successful. AAPT continues to play a major role in K-12 and undergraduate STEM education on the national level. A number of AAPT's flagship programs are funded by the National Science Foundation. We continue to seek external funding for many of the existing programs and develop others in a very challenging funding environment. Overall, the rebuilding of AAPT's finances is being sustained and the shift is being made to strategic decisions that will drive the next five to ten years in AAPT's history.

"Overall, the rebuilding of AAPT's finances is being sustained and the shift is being made to strategic decisions that will drive the next five to ten years in AAPT's history."

The Executive Office continues to provide support and engage in activities that impact many of our high school members. The Executive Office brought together 15 physics educators (primarily K-12 physics educators) in late January to discuss the second draft of the Next Generation Science Standards. The outcome of this gathering was to produce feedback on this draft. The final version of the NGSS was released in late spring. AAPT provided a letter of support (signed by both the AAPT President and Executive Officer) during the summer. Concurrently, a statement on professional development for teachers of physics was finalized and approved by the Board – see [http://www.aapt.org/Resources/policy/upload/130129\\_Statement\\_on\\_PD\\_for\\_HS\\_Physics\\_Teachers\\_final.pdf](http://www.aapt.org/Resources/policy/upload/130129_Statement_on_PD_for_HS_Physics_Teachers_final.pdf). The Physics Teaching Resource Agents program continues to receive support

through various state-level programs (such as those obtained by Frostburg University, Northwest Oklahoma State University, University of West Georgia, and Idaho State University) and the dedication of a few AAPT members in those states. The Executive Office forges ahead to develop proposals and seek opportunities to fund professional development for high school physics teachers. For example, a joint planning meeting was held in mid-August with the American Chemical Society, the American Modeling Teachers Association, and PTRA representatives to start planning professional development between chemistry and physics high school teachers. Finally, we continue to expand the number of non-PTRA professional development workshops that are approved to receive Continuing Education Units (CEUs) from AAPT. We now have a steady stream of workshops that have participants seeking CEUs.

AAPT continues to offer successful workshops for new faculty in colleges and universities as well as in two-year colleges. We held the first experienced faculty workshop during the spring, funded through the National Science Foundation. In addition, the first one-day Two-Year College Leadership Institute (TYC LI) was held prior to the Summer Meeting, providing an opportunity for faculty to discuss their challenges in and beyond the classroom and included leadership development for these faculty to become agents of change on their campuses. Another TYC LI will be held prior to the 2015 Summer Meeting.

A large portion of AAPT's revenue comes from our publications, mostly from library subscriptions. Keeping that revenue stream healthy is one of the most important responsibilities of the Executive Officer and Board. This year provided several opportunities to make sure that AAPT's journals remain strong as well as to develop strategies for ensuring a bright future for the journals. One of the highlights of the year was a joint meeting between AAPT and the AIP Publishing, LLC (the nonprofit organization that publishes AAPT's journals). Staff from AIP Publishing, LLC, the *American Journal of Physics* editor, AAPT staff involved in publications, the most recent past AAPT Secretary, the new AAPT Secretary, and a few other key AAPT individuals attended the meeting. Many ideas were generated from the meeting, a number of which were implemented shortly following (one page cards for each journal to hand to potential authors at national meetings, revised email message to be sent to authors that includes a message to join AAPT if they aren't already a member, development of focus group questions to learn more about the needs of

high school physics teachers, and exploration of expanding into ePubs). However, the most exciting news regarding AAPT publications is the hiring of Gary White as the new editor of *The Physics Teacher*. Karl Mamola passed the torch onto Gary mid-year. The transition was seamless from my perspective! Gary also serves as a faculty member at George Washington University.

I include a few other items that may be of interest to you:

- We ran a campaign to increase the Clifford E. Swartz Fund to coincide with the 50<sup>th</sup> anniversary of *The Physics Teacher* (TPT) and the transition to a new editor of *The Physics Teacher*.

“The most exciting news regarding AAPT publications is the hiring of Gary White as the new editor of *The Physics Teacher*.”

- With much leadership by Jill Marshall, AAPT Past President, we raised over \$15,000 this year to add to the Melba Phillips Medal Fund. This campaign will continue for another year with a target to raise \$30,000, the amount that will fully fund the endowment.

- For the first time, a small number of child care grants were distributed at the end of the year to fund attendees of the 2014 Winter Meeting. Guidelines were developed in consultation with three Area Committees: Women in Physics, Research in Physics Education, and Professional Concerns. See <http://www.aapt.org/Conferences/wm2014/ccgrants.cfm>. We will offer another round of grants to support attendees of the 2014 Summer Meeting who need child care.

- One major accomplishment this year in conjunction with the Advanced Laboratory Physics Association (an AAPT affiliate) is the development and approval of a new AAPT-ALPhA award for undergraduate students. We will develop the website for the award including an online application. We anticipate that the first award will be given at the 2016 Winter Meeting in New Orleans.

- AAPT continues to be active in advocating for STEM education at the national level. We are part of the Physical Sciences Education Policy Coalition (through the American Institute of Physics). PSEPC has developed a policy document to help direct the group in future advocacy activities including providing input in the drafting of Federal legislation related to K-12 STEM education.

- We saw the retirement of Su-hua Huang (Finance Department) after over 20 years of service at AAPT. Tania Hayes joined AAPT in the fall to fill the open position in the Finance Department. I welcome Tania to the AAPT team and look forward to many years of working together to advance physics education.

“With much leadership by Jill Marshall, AAPT Past President, we raised over \$15,000 this year to add to the Melba Phillips Medal Fund.”

Finally, It has been my privilege to serve you, the members of AAPT, in 2013 as Executive Officer. AAPT continues to provide leadership through the work of many AAPT members and volunteers to enrich the education and future employment prospects of all students. All of this is done in support of the organization’s mission of “Enhancing the understanding and appreciation of physics through teaching.” It is truly a joy to work with you. Thank you again

for another year of your strong support.

Sincerely yours,



Beth A. Cunningham



# 2013 Strategic Plan

*The Association Executive Board, Area Committees, Council, and staff developed and adopted a new strategic plan in 2013. The document is available for members, sections, and committees to review as they align their programs and activities with the goals and objectives of AAPT.*

## AAPT STRATEGIC PLAN GOALS AND OBJECTIVES

*Adopted October 17, 2013*

1. Create a vibrant community to support those interested in enhancing the understanding and appreciation of physics through teaching.
  - a. Support physics educators and physics education researchers through opportunities for professional development, research, and publications.
  - b. Develop programs, products, and services that meet the needs and pique the interest of physics educators throughout their careers.
  - c. Engage students and early career professionals with special programs and offerings.
  - d. Publicize widely the value and benefits of AAPT membership and the opportunities available at National Meetings.
  - e. Utilize technology to engage those interested in physics teaching in professional development activities.
  - f. Enhance local and regional community building opportunities among physics educators.
  - g. Establish programs that help develop the next generation of leaders within AAPT.
2. Enhance professional development opportunities utilizing AAPT products, journals, and programs/conferences to disseminate knowledge about the understanding of physics, physics education research, and effective physics teaching practices.
  - a. Develop and maintain a portfolio of print and electronic resources that support the physics teaching community.
  - b. Provide and support professional development for physics educators and physics education researchers locally, regionally, and nationally.
  - c. Continue to develop programs, products, and services that support physics teachers, physics departments, and administrators in adopting best practices related to physics education.
  - d. Support physics related outreach and informal education experiences.
3. Enhance the visibility and role of AAPT in the physics and STEM education communities to effectively influence policy and practice.
  - a. Support and develop position statements that can help inform public policy as it relates to physics education.
  - b. Advocate for funding and policies that promote excellence in physics teaching and physics learning.
  - c. Continue to develop relationships with organizations, nationally and internationally, that will increase support for physics education.
  - d. Serve as a forum for disseminating information on policy related to physics education.
  - e. Provide and support programmatic and policy recommendations for physics departments, schools, and administrators.
4. Enrich the field by increasing the number and diversity of physics students and teachers at all levels, including those from ethnically and linguistically diverse backgrounds, those with diverse abilities, and those from the LGBT+ community
  - a. Develop and support programs to increase the number of physics students in high school and college courses, opportunities for physics teacher preparation, and opportunities for teaching physics at all levels.
  - b. Support the development, dissemination, and implementation of best practices in recruiting, retaining, and teaching under-represented and marginalized students in physics to enhance their success in learning and practicing physics.
  - c. Enhance the diversity of AAPT and the physics education community by recruiting and supporting members from all groups, including those currently under-represented and marginalized in physics education.
  - d. Support best practices in the preparation of physics teachers to teach students from all academic, socio-economic, and cultural backgrounds.

# 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 (AJP.AAPT.ORG)

*David P. Jackson*, Editor, Dickinson College

*Daniel Schroeder*, Associate Editor, Weber State University

*AJP* continued to inform physics education globally with member subscriptions, institutional subscriptions, such as libraries and physics departments, and consortia agreements.

### AMERICAN JOURNAL OF PHYSICS STATISTICS

- 12 issues—January–December 2013 (Volume 81)
- 976 pages, 799 reviewers, 98 papers published—20% acceptance rate
- 6,640 individual and institutional subscriptions
- Approximately 56% of subscribers teach at the college and university level and 24% teach at the high school level. The remaining 20% are scientists at research facilities, students, and other interested members of the physics community.

### Resource Letters - 2 letters

Resource Letters Editorial Board: Rexford E. Adelberger, Ruth W. Chabay, Ryan E. Doezema, Amy S. Mulin, William I. Newman, and Gordon Ramsey

### Research in Physics Education - 9 articles

### Computational Physics - 5 articles

### Apparatus and Demonstration Notes - 6 articles

### Book Reviews - 18 reviews

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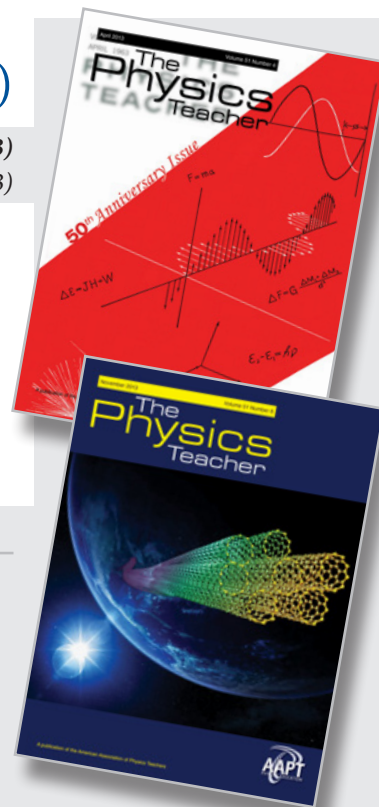
# THE PHYSICS TEACHER (TPT.AAPT.ORG)

**Karl C. Mamola**, *Appalachian State University, Boone, NC (January - July, 2013)*

**Gary D. White**, *AAPT (Beginning August 1, 2013)*

*The Physics Teacher (TPT)* continues the mandate of supporting, inspiring, and challenging our target audience—high school and college teachers of introductory physics—as well as our many other readers. A new column, iPhysicsLabs, edited by Jochen Kuhn and Patrick Vogt was added to the journal.

Karl Mamola retired and the editorial office transitioned to the new editor, Gary D. White in 2013.



## COLUMN EDITORS

### And the Survey Says...

Susan C. White, AIP, College Park, MD

### Apparatus

Erlend H. Graf, Stony Brook University, NY

### Book Reviews

John L. Hubisz, North Carolina State University

### Fermi Questions

Larry Weinstein, Old Dominion University

### Figuring Physics

Paul G. Hewitt, City College of San Francisco

### For the New Teacher

Patty Blanton, Appalachian State University, Boone, NC/Diane Riendeau, Deerfield High School, Deerfield, IL

### iPhysics Labs

Jochen Kuhn, University of Kaiserslautern, and Patrick Vogt, University of Education Freiburg

### Little Gems

Chris Chiaverina, New Trier High School, Winnetka, IL

### Physics Challenge for Teachers and Students

Boris Korsunsky, Weston High School, Weston, MA

### Websights

Dan MacIsaac, SUNY-Buffalo State College, Buffalo

### YouTube Physics

Diane Riendeau, Deerfield High School, Deerfield, IL

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Boone, NC

## THE PHYSICS TEACHER STATISTICS

- 9 issues—January–May, September–December 2013 (Volume 51)
- 576 pages, 164 reviewers, 130 papers, and 96 contributions to monthly columns (79 international authors/co-authors)—34% acceptance rate
- 7,296 individual and institutional subscriptions
- Approximately 47% of subscribers teach at the college and university level and 40% teach at the high school level. The remaining 13% are scientists at research facilities, students, and other interested members of the physics community.

# Electronic Communications

## AAPT.ORG

Having strong online publications offers AAPT members convenient access to physics education resources, news, and other member benefits. AAPT.org continues to emphasize ease-of-access and user-friendliness, and aims to be more inviting to new visitors. The home page includes a “Features” area with photos and information pertaining to upcoming or ongoing programs, projects, events, and resources; and a box with buttons to donate, nominate, and send suggestions. 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.

### Features

AAPT.org organizes the association’s many assets into appropriate categories allowing the user (both members and non-members) to easily access information regarding topical news, governance, member benefits and profiles, conferences and workshops, awards, publications, local sections, teaching and student resources, partners, giving, and marketing opportunities.

Added features include The Physics Store, and the eMentoring program. The Physics Store acquired a new look with a logo and layout incorporating a product title search and featured sales and products. The eMentoring program connects high school physics educators who desire additional guidance with experienced high school physics educators—online and FREE of charge.

### What’s next?

Efforts to enhance AAPT.org are ongoing and numerous. Some areas of activity are the area committee reports, awards nominations, online advertising, and member recruitment.

An effort to record, share, and preserve audiovisual “Story Files” is an ongoing project.

For 2013 aapt.org had:

- 409,315 visits • 1,400,846 pageviews • 3.4 pages per visit
- 247,650 new visitors All from 205 countries/territories  
#1 U.S., #2 India, #3 Canada, #4 China, #5 Philippines

### SOCIAL NETWORKING

AAPT continues to open the channels of communication and community using online social networking platforms. Below is a list of online social networks AAPT uses:

- facebook.com/AAPTHQ
- twitter.com/AAPTHQ
- flickr.com/physicsteachers
- youtube.com/physicsteachers
- pinterest.com/AAPTHQ/aboutaapt/socialnetworks.cfm

### AREA COMMITTEE WEBSITES

AAPT has created google websites for all area committees.

### MEETING PRESENTATIONS

AAPT has begun a project to preserve content from the national meetings. In addition to meeting abstracts, other content including posters, talks, plenaries, photos, and videos will be archived for future reference. The archive will be searchable. This will be a very useful source of information for members as well as area committees as they plan sessions for future meetings.

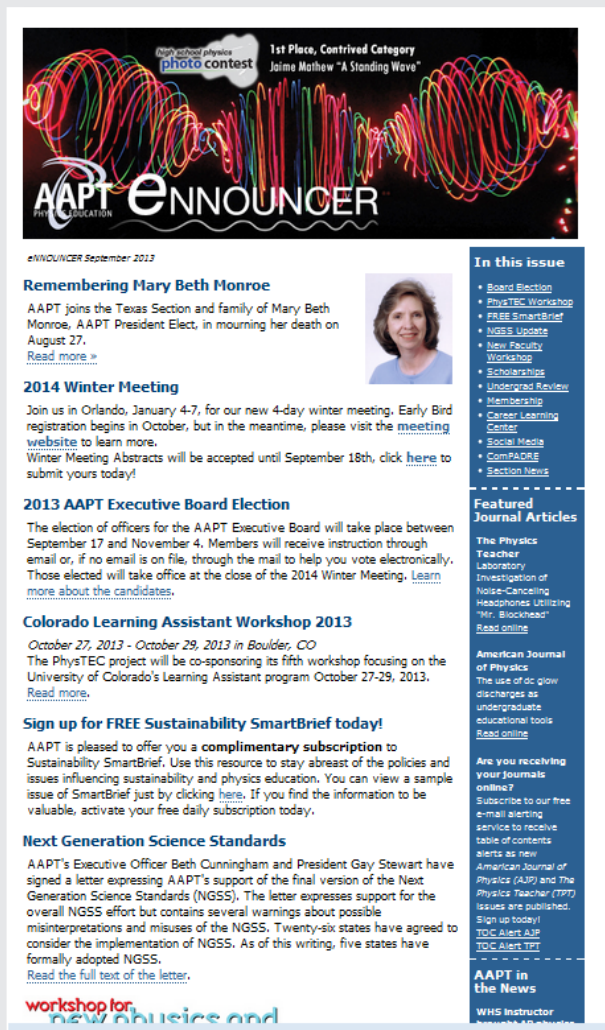
# eNNOUNCER

The eNNOUNCER, AAPT's electronic newsletter publication, is distributed to members by e-mail. The eNNOUNCER issues are published at the beginning of each month and archived on AAPT.org. The eNNOUNCER 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. Topics covered include organization specific items, action items and notable dates, news from the AAPT Executive Office, member news, section news, recommended reading, and science and education news.

## eNNOUNCER TOPICS

eNNOUNCER publishes monthly news for 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



## 2013 TOP AAPT NEWS STORIES

Listed below are highlighted news stories for 2013 from the eNNOUNCER. To read the full story go to <http://www.aapt.org/aboutaapt/ennouncer/index.cfm>.

### JANUARY

- Workshop for Experienced Physics and Astronomy Faculty Members
- AAPT 2013 Winter Meeting

### FEBRUARY

- WM13 Plenary and Award Sessions
- AAPT Response to ACHIEVE on NGSS

### MARCH

- Lillian Christie McDermott Recognized with AAPT's Melba Newell Phillips Medal
- AAPT 2013 Summer Meeting

### APRIL

- Michael Jackson Receives David Halliday and Robert Resnick Award
- Thomas Haff Named as Recipient of the Paul W. Zitzewitz Award

### MAY

- Melba Newell Phillips Medal Fund-raiser Celebration
- Next Generation Science Standards

### JUNE

- Gary D. White, New Editor for *The Physics Teacher* Announced
- 2013 U.S. Physics Team Training Camp

### JULY

- Texas Physics Consortium Wins Joint Undergraduate Physics Degree Program
- *The Physics Teacher*... 50 Years

### AUGUST

- U.S. Physics Team Earns Medals at 44th IPhO
- Successful 2013 Summer Meeting

### SEPTEMBER

- Remembering Mary Beth Monroe
- New Faculty Workshop Set for November

### OCTOBER

- Winter Meeting Preview and Awards Announced
- Remembering Albert Allen Bartlett

### NOVEMBER

- Higgs Articles from AJP and TPT

- Child Care Grants

### DECEMBER

- Conference on Introductory Physics for the Life Sciences
- 50th Anniversary of JFK Assassination

# National Meetings



## WINTER MEETING

January 5–9, 2013, New Orleans, LA

### Statistics:

There were 710 attendees, 26 exhibitors, 55 sessions, 19 workshops, and 89 posters.

### Program Committee Chair

Mary Beth Monroe

### Paper Sorters:

Gerald Feldman, Committee on Physics in Undergraduate Education, Robert V. Steiner, Committee on Educational Technologies, Kathleen A. Harper, Research in Physics Education (PER) representative

### Local organizer:

Mostafa Elaasar, Southern University at New Orleans

## Plenaries

The annual Physics Education Public Policy Symposium addressed issues concerning K-12 physics and STEM Education. The speakers were Jim Gates, University of Maryland and a member of PCAST, Ramon Lopez, University of Texas, Arlington and co-Director of UTEACH Arlington, and Richard Steinberg, City College of New York and author of “An Inquiry into Science Education: Where the Rubber Meets the Road.”

Mark Whittle, University of Virginia, addressed a “standing-room-only” audience on Monday night, with his talk entitled “The Universe’s First Million Years: Primordial Light and Sound.” On Wednesday morning, Robert Twilley, Louisiana State University, spoke on “The Mississippi River Delta Restoration as Science and Policy Issues of Public Concern: Opportunities in Science Education.”

Our AAPT award recipients delivered their special presentations during the Ceremonial Sessions. Edward “Joe” Redish, University of Maryland, recipient of the Oersted Medal, spoke on “The Implications of a Theoretical Framework for PER.” David Pines, University of California, Davis, recipient of the John David Jackson Award for Excellence in Graduate Physics Education talked about “What We Don’t Know, We Teach One Another.”

The Homer L. Dodge Citation for Distinguished Service to AAPT was presented to Stanley Micklavzina, A. James (Jim) Mallmann, and Sarah (Sam) McKagan in recognition of their exceptional service to the AAPT Physics Education community.

## Highlights

2013 Winter Meeting in New Orleans was organized around the theme, “And All That Jazz.” The many attractions reflected the rich heritage of this major United States seaport located at the mouth of the Mississippi River. Twice a day the authentic steamboat, the Natchez, provided cruises on the river for the length of the city. Attendees enjoyed the world-renowned French Quarter, the historic Pontchartrain Hotel along with the city’s many historic homes, the Magazine Street lined with boutique stores and antique shops, the Audubon Aquarium of the Americas, and the Audubon Nature Institute. Known for its distinctive Louisiana cuisine, “the Big Easy” is famous for its beignets, Italian Muffuletta sandwiches, Gulf oysters on the half shell, boiled crawfish, and those delicious New Orleans Creole dishes etouffe, jambalaya, and gumbo.

The AAPT Run/Walk, always a favorite activity, took attendees past many of the scenic highlights of New Orleans. The early morning event included historic Jackson Square, the French Quarter, and the river front. Everyone who participated in this event was a winner!

The rich musical heritage of New Orleans began during its pre-American and early American days. The unique blend of European instruments with African rhythms gave way to the birth of jazz and later to a brand of music known as rhythm and blues. Attendees had ample opportunity to hear live jazz performances at sessions during the conference and at the Tuesday night live performance by

one of the Preservation Hall's jazz bands.

Of course, technology had a high visibility throughout our meeting. Presentations ranged from "Best Practices in Educational Technology" to Online Tools and to Online Physics Courses. Some sessions reported on the use of tablets, smart phones, and the use of video games such as Angry Birds. AAPT staff streamed and videotaped the Symposium on Education Policy as well as the award and plenary talks. The meeting program was available for attendees to use on smart phones and tablets.

The Committee on Physics at Two-Year Colleges volunteered to have the Alternative Access Task Force record their session, "The Physics of Jazz." The session covered the physics of music using woodwinds, brass instruments, percussion, strings, and voice. A number of issues, including a hotel fire (not ours), relocation of the session, and failed technology made this a challenge. Thanks to the iPad of the Task Force Chair, partial YouTube videos of the presenters were recorded.

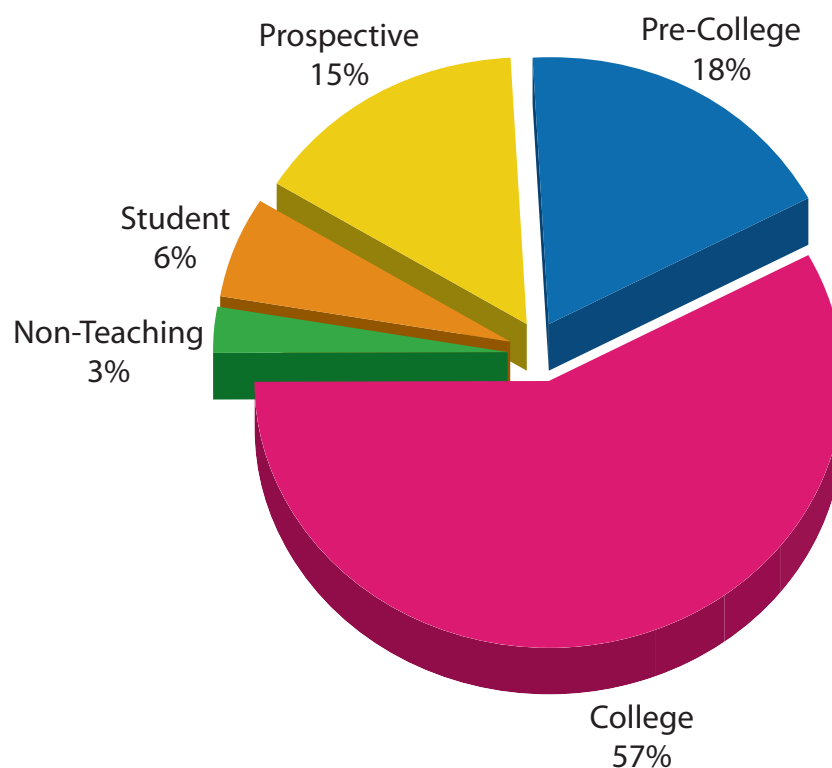
A special AIP exhibit, Exhibition on Historically Black Colleges and Universities, was on display throughout the meeting. Our physics education community is significantly underrepresented in number by ethnic minorities and women. Some paper sessions and one panel provided a forum to hear and discuss current and future efforts to reduce this under-representation.

Poster sessions are always popular and this Winter Meeting provided opportunities for posters as part of poster sessions, part of regular sessions, and part of the SPS Undergraduate Research and Outreach Poster Reception.

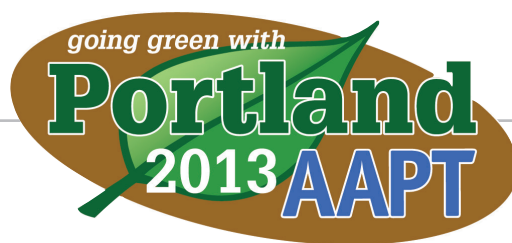
Students Exploring Engineering and Science (SEES) Program provides minority students experience with doing science. Continuing the tradition begun by Betty L. Preece, the SEES Program provided a morning of hands-on learning for students from minority, low socio-economic schools under the direction of the Society of Physics Students.

## MEETING STATISTICS

- More than 1000 physics educators, researchers, and students attend the Annual AAPT Meetings.
- 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.



# National Meetings



## SUMMER MEETING

July 13–17, Portland, Oregon

### Statistics:

There were 1,160 attendees, 26 exhibitors, 73 sessions, 39 workshops, and 211 posters.

### Program Committee Chair

Mary Beth Monroe

### Paper Sorters:

Andy Gavrin, David Sturm,  
Geraldine Cochran, Mac Stetzer,  
Mary Mogge, Toni  
Sauncy, Mary Beth  
Monroe

### Local organizers:

Ralf Widhorn and  
Elliot Mylott,  
Portland State  
University

## Plenaries

Alan M. Nathan, Professor Emeritus, University of Illinois at Urbana, Champaign gave a plenary presentation entitled “You Can Observe a Lot by Watching...Yogi Berra.” Following Yogi’s advice, Nathan used high-speed video clips to highlight some of the interesting physics underlying the game of baseball. The talk focused on the subtleties of the baseball-bat collision, the intricacies of the flight of a baseball, and many other things.

The APS Plenary, “Producing Superheavy Elements” consisted of two talks. Walter Loveland, Oregon State University, Corvallis spoke about “The Quest for Superheavy Elements.” Mark A. Stoyer from Lawrence Livermore National Laboratory talked about “Exploring the Limits of Nuclear Stability: Glimpsing the Island of Stability.”

Harvey Gould, Clark University, recognized with the Millikan Medal, spoke on “New Challenges for Old Physics Departments.” The Melba Newell Phillips Medal was presented to Lillian Christie McDermott, whose talk focused on physics education research.

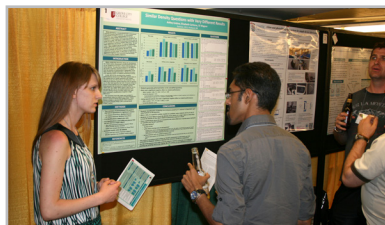
The David Halliday and Robert Resnick Award for excellence in Undergraduate Physics Teaching was presented to Michael Jackson of Central Washington University. Thomas F. Haff of Issaquah High School, received the Paul W. Zitzewitz Award for excellence in Pre-College Physics Teaching.

## Highlights

The theme for this Summer Meeting was “Going Green with Portland.” Portland State University generously hosted the AAPT workshops conducted during the first two days of the meeting. The AAPT Two-Year College Community organized a one-day Tandem Meeting preceding the AAPT meeting. In addition, the AAPT meeting included a High School Physics Teachers Day which featured sessions of special interest to high school teachers.

Our eighteen Area Committees organized a program rich in sessions and workshops. Topics included the teaching of online courses, the authoring of interactive textbooks, the Next Generation Science Education Standards, best practices in educational technology, research in math education and education research at the boundary between biology and physics, green labs and activities, and a role-playing workshop on the Pluto Debate. A special event with invited speakers celebrated the 50th anniversary of *The Physics Teacher* and Karl Mamola passed his editorial pen to Gary White. Popular events at the Summer Meeting included the Welcome Reception at the opening of the Exhibit Hall, the First Timers’ Gathering, Early Career Professionals Speed Networking Event, Poster Sessions, AAPT Fun Run/Walk, Apparatus Competition, High School Physics Photo Contest, Commercial Workshops, and the Great Book Giveaway. The PER Topical Group hosted the 2013 PER Conference and Banquet following a bridging session from the AAPT meeting.

The Summer Picnic, long considered a favorite networking activity for physics faculty and their families, was sponsored by Christine and David Vernier. The evening began with the traditional picnic spread along a city block. A demonstration show, “Physics Center Stage” presented by Portland State University’s Science Outreach Society and the Oregon Ballet Theater, demonstrated the physics concepts of force, impulse, inertia, and conservation of angular momentum as they performed at the Portland Center for Performing Arts.



# Workshops and Programs

## WORKSHOP FOR NEW PHYSICS AND ASTRONOMY FACULTY

*June 17-20, 2013 and  
November 7-10, 2013*

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 124 new faculty understand how students learn physics and astronomy, and suggested how this information can impact a new professor's teaching methods. The workshop is intended for faculty in the first few years of their initial tenure-track appointment at a four-year college or university.



workshop for  
new physics and  
astronomy faculty

Department chairs at research and four-year institutions are asked to nominate tenure-track faculty. The ideal candidate would have a year or two of teaching experience and be aware of the challenges of teaching.

The New Physics and Astronomy Workshop program was funded by grants # DUE-0813481, DUE-0121384, and DUE-9554738 from the National Science Foundation. Read more online at: [www.aapt.org/Conferences/newfaculty/](http://www.aapt.org/Conferences/newfaculty/)

## PHYSICS TEACHER RESOURCE AGENTS (AAPT/PTRA) PROGRAM

*Read more online at: [www.aapt.org/PTRA](http://www.aapt.org/PTRA)*



In 2013 PTRAs launched a new website on [aapt.org](http://aapt.org) that includes history and contact information, a blog, a FaceBook page, and links to teaching resources, projects, institutes, and workshops.

Workshops were held during the AAPT 2013 Summer Institute held in conjunction with the AAPT Summer Meeting in Portland, Oregon.

AAPT maintains a nationwide cadre of more than 150 accomplished high school teacher-leaders who are trained and continually involved in professional development. These teacher-leaders are certified as PTRAs by AAPT to lead workshops throughout the country.

### 2013 PTRAs COMMITTEE

Karen Jo Matsler, Program Director

### OVERSIGHT COMMITTEE

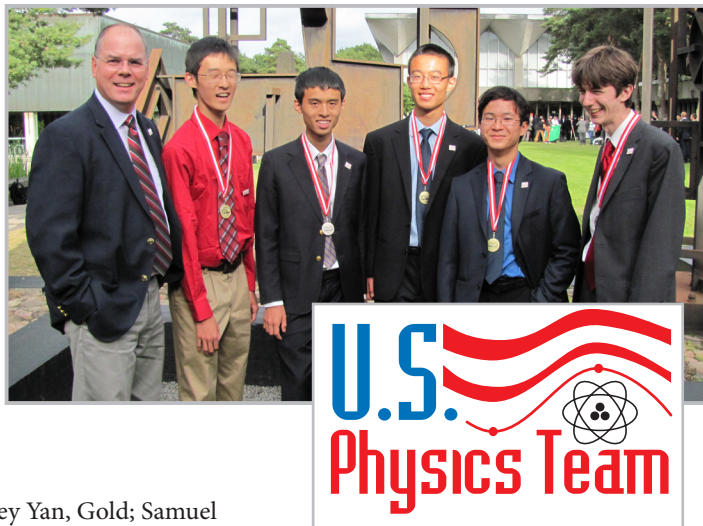
Pat Callahan, John Roeder, Deb Roudebush, Elaine Gwinn, Lillian McDermott, Chitra Solomonson, Steve Shropshire

## 2013 UNITED STATES PHYSICS TEAM

Read more at: [www.aapt.org/physicsteam/2013](http://www.aapt.org/physicsteam/2013)

The top twenty physics students from across the U.S. were identified through a rigorous exam process that began in January with approximately 4,000 students who participated in the Fnet=ma exam to become the 2013 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 44th International Physics Olympiad, held July 7 to 15 in Copenhagen, Denmark.

Medals were won by Jeffrey Cai, Silver; Calvin Huang, Gold; Jeffrey Yan, Gold; Samuel Zbarsky, Silver; and Kevin Zhou, Gold. Calvin Huang earned the highest score in the experimental portion of the competition. Kevin Zhou scored 5th highest overall in the IPHO.



The traveling team, from left to right, Coach Paul Stanley, Kevin Zhou, Calvin Huang, Jeffrey Yan, Jeffrey Cai, and Samuel Zbarsky. The team brought home three gold medals, two silver medals, and a special prize for the Best Solution of the Theoretical.

### U.S. TEAM MEMBERS

Zachary Bogorad, Solon, OH; Jeffrey Cai, Basking Ridge, NJ; Eric Chen, San Diego, CA; Kevin Fei, Carmel, IN; Owen Gray, Alexandria, VA; Calvin Huang, Palo Alto, CA; Matthew Huang, San Jose, CA; Grace Lin, Palo Alto, CA; Zach Markos, Los Angeles, CA; Xianglong Ni, Hattiesburg, MS; Edward Park, Marietta, GA; Rahul Sridhar, San Jose, CA; Lawrence Sun, Portland, OR; Jonathan Tidor, Lexington, MA; Mike Winer, Silver Spring, MD; Jeffrey Yan, Palo Alto, CA; Vickie Ye, Irvine, CA; Samuel Zbarsky, Silver Spring, MD; Kevin Zhou, Lincroft, NJ; Kevin Zhu, San Jose, CA.

### DIRECTOR

Paul Stanley, Beloit College

### ACADEMIC COACHES

Lucy Chen, David Fallest, Quizi Li, Andrew Lin, and Mariana Mao

## AAPT PHYSICS BOWL

### PHYSICS BOWL SPONSORS

AAPT  
Arbor Scientific  
Cambridge University Press  
PASCO Scientific  
Frey Scientific  
Vernier Software & Technology  
Texas Instruments  
Princeton University Press  
John Wiley & Sons  
Educational Innovations, Inc

# PHYSICSBOWL

Read more at: [www.aapt.org/Programs/contests/physicsbowl.cfm](http://www.aapt.org/Programs/contests/physicsbowl.cfm)

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.

### 2013 TOP 10 OVERALL WINNERS

#	SCORE	STUDENT, SCHOOL, CITY, STATE
1	38	Mike H. Winer, Montgomery Blair HS, Silver Springs, MD
2	37	Vinson Luo, University HS-Irvine, Irvine, CA
3	36	Samuel Z. Liu, Millburn HS, Millburn, NJ
4	36	Chih-Yuan F. Chiu, Temple City HS, Temple City, CA
5	35	Aneesh V. Samineni, The King's Academy, Sunnyvale, CA
6	34	Lisa F. Kong, Manheim Township HS, Lancaster, PA
7	34	Chi Yo Tsai, Arcadia HS, Arcadia, CA
8	34	Chris Ni, Ay Jackson Secondary School, Toronto, ON
9	34	Tony Jiany, Lynbrook HS, San Jose, CA
10	33	Liewen Ko, Olympia Institute, San Francisco, CA

### PHYSICSBOWL ADVISORY BOARD

Michael Bush, Beverly Trina Cannon,  
Michael C. Faleski, Andrzej Sokolowski,  
and Courtney Willis



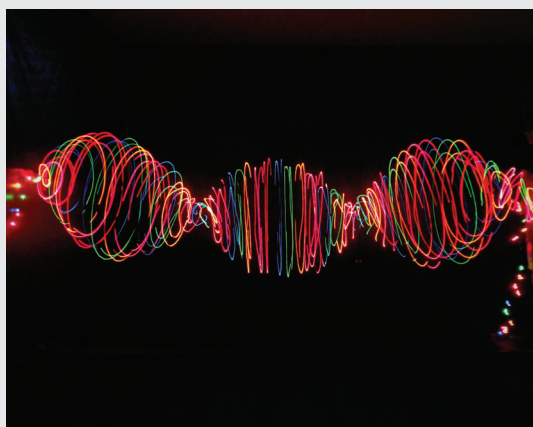
# 2013 High School Physics Photo Contest

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 more than 1,000 submissions, the 100 finalist photos were selected, displayed, and judged during the 2013 Summer Meeting. See [www.aapt.org/Programs/contests/winners.cfm?theyear=2013](http://www.aapt.org/Programs/contests/winners.cfm?theyear=2013) for information on the following overall winners of 2013.

high school physics  
**photo contest**

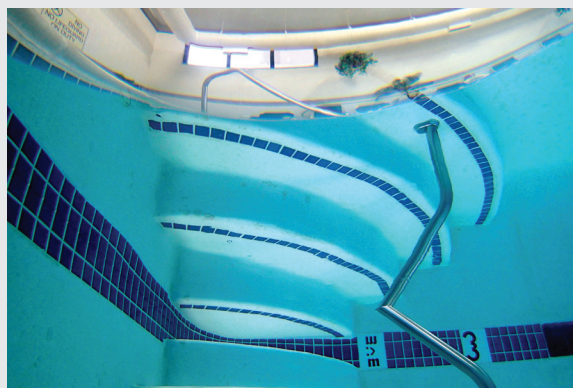
## 2013 WINNERS

**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.



FIRST

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



FIRST



SECOND



SECOND

THIRD



THIRD



# Collaborative Projects

## TEAM AMERICA ROCKETRY CHALLENGE

AAPT continued its support as 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/scores11.cfm>.



## INTERNATIONAL SCIENCE AND ENGINEERING FAIR

May 13-17, 2013 in Phoenix, Arizona

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.

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 select APS journals. Each sponsoring teacher of a student who receives an AAPT and APS award also receives a certificate.

*Judges: Donald Franklin, Dwain Desbien, Beverly Trina Cannon*

### FIRST AWARD OF \$1,200

The Visible Identification of the Electric Resonance: The Research about Visualization of Resonance Using the Dual Coil

Dohyeon Kim, 17,  
Busan High School,  
Busan, South Korea

MyungHwan Jang, 17,  
Busan High School,  
Busan, South Korea

Jeayoun Kim, 17,  
Busan High School,  
Busan, South Korea

### SECOND AWARD OF \$800

Time-Resolved Optical Study of the Surface States of Topological Insulator  $\text{Bi}_2\text{Se}_3$

Connor Everett Tom, 16,  
John W. North High School,  
Riverside, California

### THIRD AWARD OF \$500

Diluted Magnetic Semiconductor (Gd Doped ZnO)

Ahmed Nabil Halawani, 17,  
Dar Althiker School,  
Jeddah, Saudi Arabia

### CERTIFICATE OF HONORABLE MENTION

New Method to Measure Sphere Rolling Friction Coefficient

Hyeonsu Kim, 17, Chungnam Science High School, Gong-ju, South Korea

Discovery of New Variable Star in Cassiopeia

Ilkham Irekovich Galiullin, 17, Grammar School 139, Kazan, Russia

Problem Solving with Chaos

Dominic Yurk, 16, Robert L. Paschal High School, Fort Worth, Texas

## PHYSICS DAYS AT NSTA

Local AAPT Sections hosted Physics Day at nearby NSTA area meetings held in Portland, Oregon, Charlotte, North Carolina and Denver, Colorado.

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 to become members.

# Collaborative Projects (cont.)

## ComPADRE

For more than ten years the ComPADRE digital library has provided millions of visitors each month with a broad spectrum of resources for physics educators and students. The ComPADRE project started as a collaborative partnership of four professional societies on an NSF proposal, and it continues to expand through collaboration with others.



### Some New Projects:

#### Benjamin Franklin and Electrostatics

Originally hosted by Tufts University, and now hosted at the ComPADRE Digital Library, this collection of resources focuses on the works of Benjamin Franklin. Specifically, his work in electricity. <http://www.compadre.org/psrc/Franklin/>

#### Physlet Physics 2E on ComPADRE

Physlet Physics contains a collection of exercises spanning the introductory physics sequence. These exercises use computer animations generated in Java applets to show physics content. We call these Java applets Physlets (Physics content simulated with Java applets). The second edition to Physlet Physics represents a major change in how the 800 Physlet-based interactive materials are delivered to teachers and students alike. Instead of accessing materials from the CD that came with the first edition, now users simply access the Physlet Physics 2E ComPADRE site at <http://compadre.org/Physlets>. This new edition is compatible with Java 6 and 7 and offers improved speed and security. Housing the material on ComPADRE also lowers the barrier for adoption, since these materials are now available under a Creative Commons open source license. <http://www.compadre.org/physlets/>

#### Teaching Sustainability in Physics

Sustainability in physics can be a great way to link standard physics concepts to topics applicable to the real world and of interest to students. ComPADRE has developed a new set of tools to use in your classroom. [http://serc.carleton.edu/sisl/sustain\\_in\\_physics.html](http://serc.carleton.edu/sisl/sustain_in_physics.html)

### Continuing Efforts:

#### PER-Central Gets a New Look!

PER-Central is an online resource collection for the physics education research (PER) community. The new design is intended to improve the site's navigation and includes an expanded curriculum area on the front page that provides access to transformed course packages, PER-based student tutorials, research instruments, and PER pedagogy guides. <http://www.per-central.org/>

## 2013 PHYSTEC CONFERENCE

*Brings Together Physics and Chemistry Teacher Educators*

The 2013 Physics Teacher Education Coalition Conference, a joint effort of AAPT and APS, was held in Baltimore on March 16-17. The conference is the largest gathering in the country dedicated to physics teacher preparation, and was attended by 120 science teacher educators, most of whom

were physics faculty. Held in collaboration with the American Chemical Society (ACS), it also offered sessions on chemistry teacher preparation.

The theme of the conference was "Preparing the Next Generation of Physics Teachers." Session leaders brought the theme to life with

examples of programs that provide preservice physics teachers with valuable teaching and research experiences.

A highlight of the conference was a panel discussion moderated by Stamatis Vokos, Seattle Pacific University, which examined how participants could contribute to the public discourse on

teacher preparation. Panelists included Helen Quinn, Stanford University; Francis Slakey, American Physical Society; Michael Marder, University of Texas at Austin; and Paul Cottle, Florida State University. Presentations from the conference are available at <http://www.ptec.org/conferences/2013/schedule.cfm>.

# Collaborative Projects (cont.)

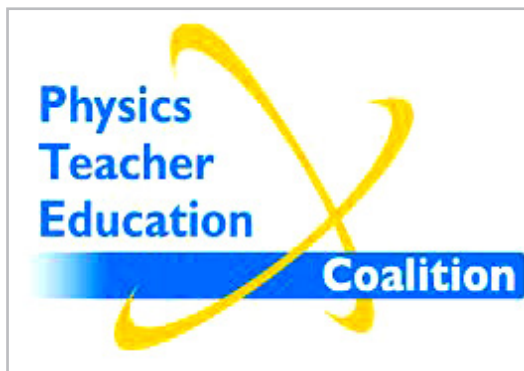
## FIVE NEW FUNDED SITES JOIN PHYSTEC PROGRAM

The Physics Teacher Education Coalition (PhysTEC) project announced in 2013 that it would provide funding for five universities to assist in the development of their physics teacher education programs. The PhysTEC project is a joint program of the American Association of Physics Teachers and the American Physical Society.

The newly selected sites are Georgia State University, James Madison University, North Carolina State University, University of Central Florida, and the University of Cincinnati. The latest round of awards brings the number of funded PhysTEC sites across the US to 30.

“It is gratifying to see that many of the newly funded sites are building on previous efforts in physics teacher education and course reform,” said Beth Cunningham, Executive Officer of the American Association of Physics Teachers.

The PhysTEC project works to increase the number of highly qualified physics teachers. To do this, the project provides substantial support to select colleges and universities to develop their physics teacher preparation programs into national models. Collectively, PhysTEC-supported sites have more than doubled the number of physics teachers they graduate.



### SUSTAINABILITY STUDY

The PhysTEC project conducted a study on the sustainability of its sites after project funding ends. The completed report includes both case studies of teacher education programs at PhysTEC legacy sites that have been maintained, grown, or productively evolved over the years since funding, and a synthesis of findings. The outcomes of the study are available at <http://www.phystec.org/webdocs/Outcomes.cfm>.

### NSF REPORT TO CONGRESS FEATURES PHYSTEC

The PhysTEC project was highlighted in the 2014 National Science Foundation Budget Request to Congress. PhysTEC was one of eleven highlighted projects and the only one related to education. The PhysTEC highlight can be found on page 14 of the full Request: <http://www.nsf.gov/about/budget/fy2014/pdf/01-fy2014.pdf>

## PHYSICS EDUCATION RESEARCH (PER)

### PER LEADERSHIP ORGANIZING COUNCIL

Andrew Elby, Chair

Dewey Dykstra, Vice Chair

Danielle Harlow, Treasurer

MacKenzie Stetzer, ex officio  
(chair of AAPT Research in Physics Education Committee)

### ORGANIZING COMMITTEE

Debra Demaree, Oregon State University

Leslie Atkins, California State University Chico

Luke Conlin, Stanford University

Sissi Li, California State University Fullerton

Yuhfen Lin, Florida International University

**PER Conference 2013—Portland, Oregon**  
*From Fearing Physics to Having Fun with Physics:  
Exploring the Affective Domain of Physics Learning  
from Multiple Perspectives*  
(277 attendees)

### Plenary sessions:

*From Cognitive Science to Physics Education and Back*, Sian L. Beilock, University of Chicago

*Affect not as an afterthought: Coupling content and social-psychological aspects in physics learning*, Noah D. Finkelstein, University of Colorado-Boulder

*Integrating emotions into fine-grained accounts of students' reasoning*, Ayush Gupta, Physics Education Research Group, University of Maryland

*From theory to practice: The lengthy way of affect into classrooms and practices*, Marja-Liisa Hassi, University of Helsinki

*Having the Journey: Physics Education and Transformative Experiences*, Kevin Pugh, University of Northern Colorado

# 2013 Awards and Grants

## HANS CHRISTIAN OERSTED MEDAL

**Edward (Joe) Redish, University of Maryland, College Park, MD**  
*The Implications of a Theoretical Framework for PER*



For the past 20 years Redish's research has focused on physics education with an emphasis on the role of student expectations and understanding the kinds of difficulties physics students have with problem solving from introductory to upper-division physics. Redish has been a major leader in bringing the ideas of physics education research to the community of STEM education researchers. His book, *Teaching Physics*, describes research-based curriculum developments and methods, and was distributed to thousands of physics faculty free by John Wiley & Sons. He is in great demand as a speaker on the topic of physics education research and, since 2000, he has given more than 150 invited talks at conferences and universities around the world.

Redish has been particularly interested in the development of theoretical models of cognition relevant to education. This has led to development (with Bao) of a new analytical method for combining qualitative and quantitative assessment techniques, and to development (with Saul and Steinberg) of a survey instrument for probing student expectations in physics class (the Maryland Physics Expectations Survey – MPEX).

He has been a mentor to a large number of physics education researchers and has supervised more than thirty graduate students and postdoctoral fellows in physics education research and nuclear physics. The full press release is available at [http://www.aapt.org/aboutaapt/redish\\_oersted\\_pr20120913.cfm](http://www.aapt.org/aboutaapt/redish_oersted_pr20120913.cfm)

ESTABLISHED IN 1936, THE OERSTED MEDAL HONORS THE DANISH PHYSICIST HANS CHRISTIAN OERSTED (1777-1851). THIS PRESTIGIOUS AWARD IS PRESENTED ANNUALLY TO A PERSON WHO HAS HAD OUTSTANDING, WIDESPREAD, AND LASTING IMPACT ON THE TEACHING OF PHYSICS.

## ROBERT A. MILLIKAN MEDAL

**Harvey Gould, Clark University, Worcester, MA**  
*New Challenges for Old Physics Departments*



Gould has been a pioneer in computational and statistical physics education. Throughout his career, he has worked to develop collaboration and communication among his colleagues while supporting the common good, making unique and important contributions to the community of physicists and physics educators.

Gould has shared his knowledge of the use of computers and computer simulations in physics education. Of particular note are his undergraduate textbooks, *Introduction to Computer Simulations Methods*, coauthored with Wolfgang Christian and Jan Tobochnik, and *Statistical and Thermal Physics*, coauthored with Tobochnik. Both books have inspired physics teachers throughout the world to incorporate computers and computer simulations in their courses.

As co-editor with Jan Tobochnik of the Computer Simulation column in *Computers in Physics and Computing in Science and Engineering* for over ten years, Gould has had a positive impact on many physics teachers. In his role as Associate Editor of the *American Journal of Physics* for ten years, he edited approximately 1000 articles and played an active and effective role in improving manuscripts to make them more accurate, readable, and understandable.

The first Gordon Research Conference on Physics Research and Education was initiated and co-chaired by Gould and Tobochnik. These conferences were followed by the 1999 launch of theme issues of *American Journal of Physics* that are tied to the Gordon Conferences.

THE ROBERT A. MILLIKAN MEDAL, ESTABLISHED IN 1962, RECOGNIZES TEACHERS WHO HAVE MADE NOTABLE AND CREATIVE CONTRIBUTIONS TO THE TEACHING OF PHYSICS.

# 2013 Awards and Grants (cont.)

## MELBA NEWELL PHILLIPS MEDAL

Lillian Christie McDermott  
*DBER—A View from Physics*



A long-time AAPT member, McDermott's foundational work in physics education research has strengthened the association's programs and benefited the overall physics education community. Her service began with a commitment to improve physics education for future elementary school teachers and later included high school teachers as well. The establishment and growth of the University of Washington Physics Education Group, the longest-lived U.S. teacher education program based in a university physics department, is just one of the many significant achievements resulting from her commitment to physics education. Her graduate students have gone on to prominence in AAPT and in faculty positions across the country.

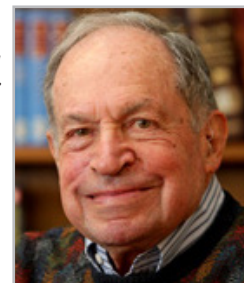
Under McDermott's guidance, the University of Washington Physics Education Group has served as a model for discipline-specific educational research and curriculum development, and produced numerous trailblazing articles. Similar physics education research Ph.D. programs have been set up at several other universities in the U.S. The UW Physics Education Group has developed two widely distributed sets of instructional materials, *Physics by Inquiry* and *Tutorials in Introductory Physics*. The latter are intended to supplement the lectures and labs in university physics courses.

As the first chairperson of the AAPT Research in Physics Education Committee, McDermott organized the first invited session at AAPT on PER back in the early 1980s, and over the years has planned many high-quality and very well received invited sessions. Her reputation in the field introduced many international researchers in the field to the AAPT and its conferences.

THE MELBA NEWELL PHILLIPS MEDAL IS PRESENTED TO AAPT LEADERS WHO, LIKE MELBA NEWELL PHILLIPS AFTER WHOM THE MEDAL IS NAMED, HAVE PROVIDED CREATIVE LEADERSHIP AND DEDICATED SERVICE THAT RESULTED IN EXCEPTIONAL CONTRIBUTIONS TO AAPT.

## THE JOHN DAVID JACKSON AWARD FOR EXCELLENCE IN GRADUATE PHYSICS EDUCATION

David Pines, Center for Advanced Study,  
University of Illinois at Urbana-Champaign, Urbana-Champaign, IL  
*What We don't Know We Teach One Another*



Pines was selected to receive the Jackson Award in recognition of his authorship of "The Many Body-Problem" and "Elementary Excitations in Solids" and the two-volume text/monograph, "The Theory of Quantum Liquids," written with Philippe Nozieres.

These publications served to define and describe significant sub-fields of physics. Additionally, he is recognized as the founder of the innovative series, *Frontiers in Physics*, containing over 100 volumes, for which he has served as Editor since its inception in 1961. The series has been a significant source of knowledge and inspiration for graduate students in all fields of physics. To quote from the Editor's Foreword: "The series has made it possible for leading physicists to communicate in coherent fashion their views of recent developments in the most exciting and active fields of physics—without having to devote the time and energy required to prepare a formal review or monograph."

Pines is Distinguished Research Professor at UC Davis, Research Professor of Physics and Professor Emeritus of Physics and Electrical and Computer Engineering in the Center for Advanced Study, University of Illinois at Urbana-Champaign, and retired last year as the Founding Director of the Institute for Complex Adaptive Matter, a global partnership connecting scientists who study emergent behavior in matter in its 71 branches representing 111 institutions.

NAMED IN HONOR OF OUTSTANDING PHYSICIST AND TEACHER, JOHN DAVID JACKSON, THIS AWARD RECOGNIZES PHYSICISTS AND PHYSICS EDUCATORS WHO, LIKE JOHN DAVID JACKSON, HAVE MADE OUTSTANDING CONTRIBUTIONS TO CURRICULUM DEVELOPMENT, MENTORSHIP, OR CLASSROOM TEACHING IN GRADUATE PHYSICS EDUCATION.

# 2013 Awards and Grants (cont.)

## THE DAVID HALLIDAY AND ROBERT RESNICK AWARD FOR EXCELLENCE IN UNDERGRADUATE PHYSICS TEACHING

**Michael Jackson, Central Washington University, Ellensburg, WA**  
*Teaching Physics and Its Role in the Survival (and growth)  
of a Physics Program*



Jackson has an exceptional record of accomplishments in all three key aspects of a faculty member's responsibilities (instruction, scholarship, service). He is an excellent and popular teacher who has accumulated a superior record of peer-reviewed scholarship while carrying out sustained contributions to the university, profession, and community, all while serving as a transformative chair for CWU's physics department during a particularly challenging and demanding period for the department and the university.

While serving as the chair of his department, Jackson typically teaches a full load of undergraduate courses at both the introductory and upper-division levels as well as teaching in and contributing to CWU's NSF-funded Science Talent Expansion Program (STEP), and teaching a range of other credit bearing courses. He is highly regarded by the faculty and staff in the department and the college for his commitment to, success in, and championing of highly effective teaching. Qualitative and quantitative Student Evaluation of Instruction survey results and other assessments of his teaching have consistently portrayed Jackson as an exceptional and dynamic instructor who is deeply invested in student learning and is constantly seeking out and applying best practices techniques.

## THE PAUL W. ZITZEWITZ AWARD FOR EXCELLENCE IN PRE-COLLEGE PHYSICS TEACHING

**Thomas F. Haff, Issaquah High School, Issaquah, WA**  
*Creating an Environment that Lets Learning Occur*



The Washington Section of the American Association of Physics Teachers honored Haff with an Outstanding High School Teacher Award Oct. 9, 2010 at its state meeting. This is the first time the chapter has given the award, and it will now be called the Tom Haff award, in honor of its first recipient.

Haff epitomizes the qualities most desired in a teacher. He is an enthusiastic, expert teacher; he explains physics so the subject comes alive for students, inspiring them to seek and grasp a deeper level of understanding.

He truly understands that his job is not only to teach science concepts to his students; rather to instill in them a curiosity and enthusiasm for learning science. He is an effective mentor, providing opportunities for students to interact with physics educators and physicists at local and national meetings. He immerses himself in his physics classes. He ran his AP physics course, for nine years, after school hours so all students in the district would have an opportunity to participate. His passing rate was well over 98% on the AP exam and his students did exceptionally well in college.

Haff consistently applies for grants so that he can keep the curriculum up-to-date with new text books and supplies, supports his students with personal letters in their college applications, and supports their efforts to obtain summer internships after graduation.

ESTABLISHED IN 1993 AND NOW  
NAMED FOR THE AUTHORS OF A  
VERY SUCCESSFUL COLLEGE-LEVEL  
TEXTBOOK ON INTRODUCTORY  
PHYSICS AND FUNDED SINCE 2010  
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EXCELLENCE IN UNDERGRADUATE  
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TEACHING UNDERGRADUATE  
PHYSICS, WHICH MAY INCLUDE  
THE USE OF INNOVATIVE  
TEACHING METHODS.

ESTABLISHED IN 1993 AND  
FUNDED SINCE 2010 BY A  
GENEROUS GIFT TO AAPT FROM  
PAUL W. AND BARBARA S.  
ZITZEWITZ AND NAMED FOR PAUL  
W. ZITZEWITZ, THE PRINCIPAL  
AUTHOR OF THE HIGHLY  
ACCLAIMED AND WIDELY  
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TEXT *PHYSICS: PRINCIPLES AND  
PROBLEMS* AND A LONG-TIME  
MEMBER AND SUPPORTER OF AAPT,  
THE PAUL W. ZITZEWITZ AWARD  
FOR EXCELLENCE IN PRE-COLLEGE  
PHYSICS TEACHING RECOGNIZES  
OUTSTANDING ACHIEVEMENT IN  
TEACHING PRE-COLLEGE PHYSICS.

# 2013 Awards and Grants (cont.)

## HOMER L. DODGE CITATIONS FOR DISTINGUISHED SERVICE TO AAPT

Winter Meeting 2013

**James Mallmann** was presented with a 2013 Distinguished Service Citation in recognition of his service as Wisconsin Section Representative and as the President of the Wisconsin Section of AAPT. His service to AAPT has also included the Committee on Apparatus, which runs the Apparatus Competition, chairing the committee in 2002. He has also served as chair of the Committee on Laboratories. A member of AAPT since 1978, he has presented a paper at every summer AAPT meeting since 1981.

Mallmann co-authored, with Norman C. Harris and Edwin M. Hemmerling, *Physics: Principles and Applications* and *Experiments in Physics* which were published in 1990 by McGraw-Hill Companies.



**Sarah, “Sam” McKagan** was recognized for her work as the creator and author of the “PER User’s Guide,” a web resource to help physics educators learn about the results of Physics Education Research and apply them in the classroom. This resource has been invaluable in building a bridge between the communities of research and practice in physics education.

Not only has she done the work of developing and maintaining the Per User’s Guide since 2008, she has also taken the lead in seeking funding support for these efforts, serving as the PI on a grant through the NSF NSDL program to develop a pilot site. Most recently she is the PI on a proposal to the NSF WIDER program to develop PER resources for Physics Department Chairs.



**Stanley Micklavzina**, received the *Distinguished Service Citation* in recognition of his role as a founder and a past president of PIRA. He has served on the Committee on Science Education for the Public, chairing the committee from 2008-09, and has also served on the Bauder Fund Committee and is again currently serving on both committees. Notably, he produced and directed the Demonstration Shows at the 2008 AAPT Summer Meeting in Edmonton, Alberta, and the 2010 AAPT Summer Meeting in Portland, Oregon.

Micklavzina is publicly known as the engineer of “Science Circus,” an annual event that promotes science to the public. His efforts to advance physics education at all pedagogic levels have earned him national and international recognition.



HOMER L. DODGE CITATIONS  
RECOGNIZE AAPT MEMBERS  
FOR THEIR EXCEPTIONAL  
CONTRIBUTIONS TO THE  
ASSOCIATION AT THE NATIONAL,  
SECTIONAL, OR LOCAL LEVEL.



# 2013 Awards and Grants (cont.)

## HOMER L. DODGE CITATIONS FOR DISTINGUISHED SERVICE TO AAPT

Summer Meeting 2013

**Daniel H. Phelps** is a retired physics teacher, having taught physics at the University of British Columbia, St. Georges School, and Columbia College.

A member of AAPT since 1956, Phelps has been active in the British Columbia Section ceaselessly working to encourage the teaching of physics and to build up the organization. He served as a Section officer (Vice President, President, and Past President) from 2008-2011 and still serves as a section executive committee member.

His drive and enthusiasm brought the results of current research in the teaching of physics to physics educators at all levels. He has given numerous talks at local BCAPT meetings, college articulation meetings, and science teacher conferences. He has also arranged workshops for teachers, inviting some of AAPT's leading physics faculty, which were very successful. Colleagues note that he has been the driving force providing the energy, enthusiasm, and organization to make these events happen.

Phelps was also instrumental in moving the local organization from one that dealt largely with the interests of university and college teachers to one that includes and serves those teaching at all levels, especially high school teachers of physics, to bring awareness of new and better methods to teachers at all levels.



**Bob Powell** is Professor and Chair of Physics and Director of the Observatory at the University of West Georgia, where he is completing his 46th year of teaching.

As a member of AAPT since 1968, Powell was active in forming the Southern Atlantic Coast Section and served as its first Secretary-Treasurer. He has served two terms as President and is currently serving as Section Representative.

Powell is a strong supporter of AAPT and its programs. He has provided physics training for teachers across Georgia through the AAPT/PTRA program and continued to find funding for those programs through MSP and Teacher Quality grants. In addition to administering these grants, he is very involved in training teachers by attending and teaching at all workshop sessions. Powell is also concerned about the relatively few undergraduates receiving degrees in physics teaching with certification and is leading his department in recruiting and graduating more qualified high school physics teachers.

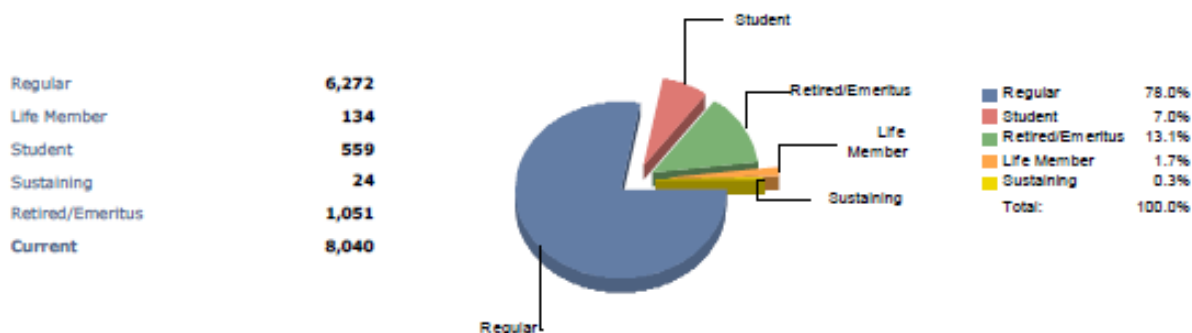


HOMER L. DODGE CITATIONS  
RECOGNIZE AAPT MEMBERS  
FOR THEIR EXCEPTIONAL  
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# Membership

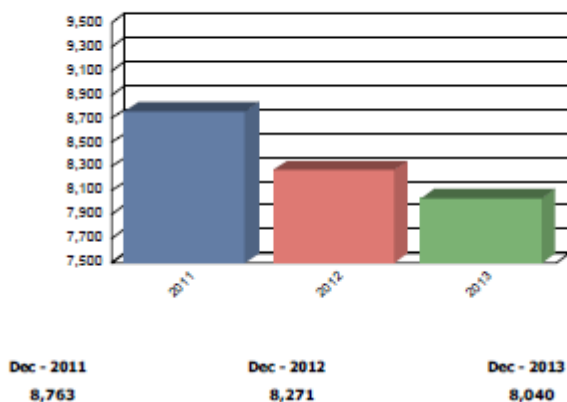
*Spanning academia, research, and industry; comprised of educators, Nobel Prize winners, and students alike; our members bring a wealth of experience, diversity, and individual recognition. Most importantly, all share the same dedication to physics and the physics education community.*  
 (December 31, 2013)

## MEMBERSHIP BY MEMBER TYPE



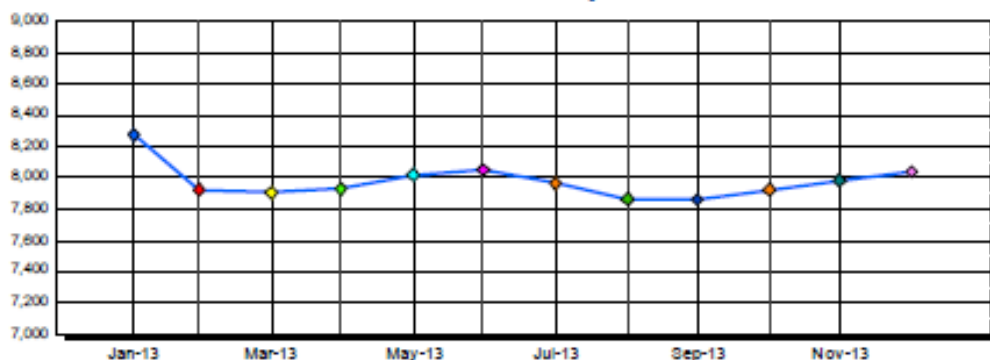
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*Membership Comparison by Month and Year*



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*Year to Date Membership Trends*



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## 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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Philip Hammer

### AAAS SECTION FOR EDUCATION Q

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Beverly Karplus Hartline

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Beth A. Cunningham

### AIP GOVERNING BOARD

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Jill Marshall

Mary Beth Monroe

Gay Stewart

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# AAPT Section Representatives

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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. Section Representatives are AAPT members who are officers in the local section and, together with the Executive Board, they make up the AAPT Council.*

<b>ALABAMA SECTION</b> Stanley Jones	<b>HAWAII SECTION</b> James L. Redmond	<b>MONTANA SECTION</b> Rich McFate	<b>SOUTHEASTERN PENNSYLVANIA SECTION</b> Jeffrey M. Wetherhold
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<b>BRITISH COLUMBIA SECTION</b> Sarah Durston Johnson	<b>LONG ISLAND SECTION</b> Tania Entwistle	<b>NORTH DAKOTA SECTION</b> Donald L. Hoff	<b>ST. LOUIS SECTION</b> Gary E. Taylor
<b>CENTRAL PENNSYLVANIA SECTION</b> Michael R. Gallis	<b>LOUISIANA SECTION</b> Rhett J. Allain	<b>NORTHERN CALIFORNIA-NEVADA SECTION</b> Lee S. Trampleasure	<b>TENNESSEE SECTION</b> Spencer L. Buckner
<b>CHESAPEAKE SECTION</b> Deonna Woolard	<b>MEXICO SECTION</b> Genaro Zavala	<b>OHIO SECTION</b> Myra West	<b>TEXAS SECTION</b> Karen Jo Matsler
<b>CHICAGO SECTION</b> Martha Lietz	<b>MICHIGAN SECTION</b> Michael Faleski	<b>ONTARIO SECTION</b> Tetyana Antimirova	<b>WASHINGTON SECTION</b> Robert Hobbs
<b>COLORADO-WYOMING SECTION</b> Vincent H. Kuo	<b>MINNESOTA SECTION</b> Leonardo Hsu	<b>OREGON SECTION</b> Patrick S. Keefe	<b>WESTERN PENNSYLVANIA SECTION</b> Dyan Jones
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	<b>MISSOURI SECTION</b> James M. Borgwald	<b>SOUTH DAKOTA SECTION</b> Joel D. Rauber	





# Financials

## THE AMERICAN ASSOCIATION OF PHYSICS TEACHERS, INC.

### Balance Sheet—Year Ended December 31, 2013 (With comparative totals for 2012)

	DECEMBER 2013	DECEMBER 2012
<b>ASSETS</b>		
Cash and Cash Equivalents	\$604,759	\$1,337,202
Investments	4,836,042	3,924,150
Receivables, Net		
Grants	485,393	98,432
Due from affiliate	43,580	118,585
Membership	738,872	43,554
Inventory	85,092	49,118
Prepaid Expenses	79,878	60,870
Investment in ACP	355,223	288,298
Property and Equipment, Net	21,813	33,434
<b>TOTAL ASSETS</b>	<b>7,250,652</b>	<b>5,953,643</b>
<b>LIABILITIES &amp; NET ASSETS</b>		
<b>LIABILITIES</b>		
Accounts Payable and Accrued Expenses	\$242,525	\$158,653
Accrued Payroll and Related Liabilities	130,139	173,936
Unearned Revenue	2,377,018	2,167,909
Deferred Compensation Obligation	477	6,461
Accrued Postretirement Benefit Obligation	451,524	489,583
<b>TOTAL LIABILITIES</b>	<b>3,201,683</b>	<b>2,996,542</b>
<b>NET ASSETS</b>		
Unrestricted		
Undesignated	2,902,480	1,720,074
Board designated	192,427	183,950
	<b>3,094,907</b>	<b>1,904,024</b>
Temporarily Restricted	465,827	564,842
Permanently Restricted	488,235	488,235
	<b>4,048,969</b>	<b>2,957,101</b>
<b>TOTAL LIABILITIES &amp; NET ASSETS</b>	<b>\$7,250,652</b>	<b>\$5,953,643</b>

### Statement of Activities—Year Ended December 31, 2013 (With Comparative Totals for 2012)

	UNRESTRICTED			2013 TOTAL	2012 TOTAL
	UNDESIGNATED	BOARD DESIGNATED	TEMP RESTRICTED		
<b>REVENUE &amp; SUPPORT</b>					
American Journal of Physics	\$1,677,302	-	-	\$1,677,302	1,634,148
The Physics Teacher	1,006,231	-	-	1,006,231	977,280
Membership	915,129	-	-	915,129	898,201
Meetings, workshops and projects	862,128	-	-	862,128	823,497
Grants	680,241	-	-	680,241	546,017
Investment Income (Loss)	447,070	12,110	148,635	607,815	417,364
Other Publications	232,840	-	-	232,840	230,007
International Physics Olympiad	118,758	-	-	118,758	100,485
Share in earnings of investment in ACP	66,925	-	-	66,925	67,160
Contributions	58,101	2,187	788	61,076	268,903
Miscellaneous Income	3,668	-	-	3,668	7,862
Net assets released from restrictions	254,258	(5,820)	(248,438)	-	-
<b>TOTAL REVENUE AND SUPPORT</b>	<b>6,322,651</b>	<b>8,477</b>	<b>(99,015)</b>	<b>6,232,113</b>	<b>5,970,924</b>
<b>EXPENSES</b>					
Program Services:					
American Journal of Physics	\$720,604	-	-	\$720,604	\$682,893
The Physics Teacher	697,076	-	-	697,076	659,128
Memberships	834,455	-	-	834,455	792,798
Meetings, workshops and projects	1,114,421	-	-	1,114,421	1,239,093
Grants	695,186	-	-	695,186	546,016
Other Publications	959,662	-	-	959,662	699,017
Support services:					
General and administrative	105,516	-	-	105,516	137,969
Fundraising	13,325	-	-	13,325	15,447
<b>TOTAL EXPENSES</b>	<b>5,140,245</b>	<b>-</b>	<b>-</b>	<b>5,140,245</b>	<b>4,772,361</b>
<b>CHANGE IN NET ASSETS</b>	<b>1,182,406</b>	<b>8,477</b>	<b>(99,015)</b>	<b>1,091,868</b>	<b>1,198,563</b>
Net Assets:					
Beginning	1,720,074	183,950	564,842	488,235	2,957,101
<b>ENDING</b>	<b>\$2,902,480</b>	<b>\$192,427</b>	<b>\$465,827</b>	<b>\$488,235</b>	<b>\$4,048,969</b>
				<b>\$2,957,101</b>	

# 2013 In Memoriam

## AAPT Member & Physics Community Obituaries

Remember someone special by giving a gift in their memory...

Donate to the Memorial Fund at [aapt.org/Membership/memoriam.cfm](http://aapt.org/Membership/memoriam.cfm).

### Tucker Chan

JANUARY 5, 2013

Physics Olympian and gold medal winner, Tucker Chan died accidentally in Menlo Park, California. A student at Stanford University pursuing a Ph.D. in high energy physics, he was twice selected for the U.S. Physics Team and won a gold medal in 2008. He attended M.I.T, graduating in 2012 with degrees in mathematics and physics.

### John S. Risley

APRIL 5, 2013

In 1997, John oversaw the development of *WebAssign*, an online application best known for grading homework, and its successful commercialization with over 180 employees. Thanks to John's leadership, *WebAssign* grew successfully from a university-based homework system to a company that serves more than 1 million students each year at over 1,500 educational institutions worldwide. Recently, *WebAssign* was reincorporated as a benefit corporation and its ownership was transferred to its employees.

John was a passionate teacher and physicist whose gifts in leadership and business helped teachers teach, students learn, and physics software developers take their ideas to the marketplace.

### Paul William Zitzewitz

APRIL 30, 2013

In 2010 Paul W. and Barbara S. Zitzewitz generously endowed AAPT's *Excellence in Pre-College Teaching* award and the name of the award was changed to the *Paul W. Zitzewitz Award for Excellence in Pre-College Physics Teaching*.

Paul's commitment to an experimental approach to scientific research and learning was born out of a basic curiosity about the world, one that he tried to encourage in his students, children, and grandchildren alike.

### Eugen Merzbacher

JUNE 6, 2013

He was a dedicated educator and, at UNC Chapel Hill, was named a Kenan Professor in 1969. He received UNC's 1972 *Thomas Jefferson Award*. In 1990, he served as President of the American Physical Society. He retired from UNC in 1991. In 1993 he received an honorary degree from the University of North Carolina at Chapel Hill. He received many awards from his peers for his teaching and service to the physics community.

Mersbacher wrote one of the first graduate level textbooks on quantum mechanics, which went into a third edition in 1998 and was an introduction to the field for generations of students.

### Mary Beth Todd Monroe

AUGUST 27, 2013

Mary Beth had a deep commitment to students and the progress of students toward their career goals. She formed one of the first Society of Physics Student chapters at a two-year college at South West Texas Junior College (SWTJC) in 1975. She served as advisor for that SPS chapter her entire career at SWTJC, taking her students to Texas Section AAPT meetings and other SPS activities. She served as SPS Zone 13 Councilor from 1993 to 1999.

### Albert Allen Bartlett

SEPTEMBER 7, 2013

A dedicated member of AAPT, Al was recognized with the *Distinguished Service Citation* in 1970, the *Robert A. Millikan Medal* in 1981, and the *Melba Newell Phillips Medal* in 1990. He served on the AAPT Executive Board with a term as President in 1978-79.

Al Bartlett was a consummate teacher who was eager to have you appreciate the physics around you and to learn the principles that guide our understanding. He will be missed by AAPT and by the entire physics teaching community as he continues on his exponential journey.

### David Winch

OCTOBER 7, 2013

In addition to his wife Suzanne, David leaves eight surviving children, twelve grandchildren, and six great grandchildren. He also leaves a substantial number of colleagues with whom he was still collaborating to the end. Among these are a dozen young physics faculty from around the nation engaged in the Partnership for Integration of Computation into Undergraduate Physics (PICUP), co-founded with Norman Chonacky in 2005. Their mission, as was his, is to inspire and facilitate physics faculty to re-shape their undergraduate courses so their treatment of physics corresponds more closely to contemporary science and engineering practice. David will be missed by those from the PICUP, and by all of his colleagues and friends in the physics community.

### C. Clifton "Cliff" Chancey III

OCTOBER 19, 2013

Clifton "Cliff" Chancey III, head of University of Northern Iowa's physics department, left behind a 12-year legacy as a steadfast leader. A theoretical physicist, his interests were atomic and molecular theory, biophysical modeling and neuroscience. In some of his most recent research he was studying the physical processes involved in neural transmission. A member of AAPT since 1988, Chancey was active in the Iowa Section. He served as President Elect (2009), President (2010), and Past President (2011).

### Keith Randolph Symon

DECEMBER 16, 2013

Symon was awarded the *Particle Accelerator and Technology Award of the IEEE Nuclear and Plasma Science Society* in 2003, and the *American Physical Society Robert R. Wilson Prize* in 2005. Keith was an internationally recognized figure in plasma physics and particle accelerator design, developing the FFAG (fixed field alternating gradient) accelerator concept in parallel with physicist colleagues. He contributed to the work at Fermi Lab, Argonne National Laboratory, Brookhaven National Lab, labs in Los Alamos and La Jolla, and did early research for the Hadron collider at CERN in Geneva, Switzerland in 1962 and 1963.



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