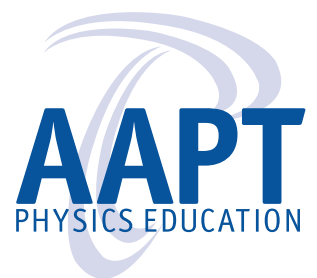




American Association of Physics Teachers

2017 ANNUAL REPORT



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President's Report

GEORGE A. AMANN



Being President of AAPT has been a true privilege. During the past year, I have been witness to and participant in numerous AAPT activities that helped the organization maintain its position as the world's premier physics education association. Above all however has been the opportunity to work with some wonderful people on the Board of Directors.

During the past year, the Board has spent considerable time brainstorming how to meet AAPT's immediate concerns and how to better serve our members in the future. In a time dominated by digital communication, one of the Board's main concerns was how to remain relevant and continue to provide access to world class physics education. As the "March for Science" (in which AAPT participated) showed, the need for a vibrant science community that works diligently to educate both students and the general public about the importance of science is vital. AAPT's partnership with and participation in the "March" was only one of a number of activities we undertook to meet this challenge.

The organization's area committees, under the guidance of president elect Gordon Ramsey, have been charged with devoting more of their time to addressing the crucial issues confronting AAPT. Of particular note was the work by the committee on diversity in physics to assist AAPT in expanding our efforts to increase participation of individuals from underrepresented groups in our national meetings. We now offer special travel grants for these individuals.

AAPT's sections are a vital aspect of making our conferences a success. Meeting site selection and organization has strong input from the local sections. In celebration of the 2017 solar eclipse, AAPT in conjunction with the Ohio and Kentucky Sections sponsored "Solarfest" at the summer meeting in Cincinnati to bring the excitement of the eclipse to the public. Thanks to all who were involved for their hard work to make this happen. The winter meeting in San Diego with the National Society of Hispanic Physicists highlighted the local Spanish cultural influence in San Diego with the assistance of the Southern California Section.

"Thanks to the efforts of Executive Officer Beth Cunningham and her office team and former treasurer Steve Turley, AAPT is in excellent fiscal shape."

As always, the Board's primary responsibility to the organization is fiduciary. Accordingly, much time was devoted to ways to address AAPT's primary concerns regarding funding issues. Thanks to the efforts of Executive Officer Beth Cunningham and her office team and former treasurer Steve Turley, AAPT is in excellent fiscal shape. The organization has now reserves equal to a year's operating budget

giving it a margin of safety previously lacking. Although challenges remain for the long term, the Board and staff remain diligent on controlling costs and trying to grow revenue.

AAPT has for the past 86 years provided first class support for physics education, and will continue to do so for the foreseeable future with the support of our members and staff. With your help and support it will remain a vibrant and dynamic organization.

Sincerely yours,

George Amann

George A. Amann

Executive Officer's 2017 Annual Report

BETH A. CUNNINGHAM



We have finished another year of activities due to the good work of dedicated members and devoted staff. The following is a summary of the events from the year.

We mourn the passing of John Layman, who served as President (1982-83), Secretary (1991-95), and Archivist, as well as many other volunteer roles in AAPT. John was a daily fixture in the Executive Office. He loved coming to the office and sharing his deep knowledge and history of AAPT. I spent many hours learning from John as I began my tenure at AAPT in 2011. He made my life much easier during and after the transition. A supporter of the arts, John shared his love for the Arena Stage with all staff who wanted to join him in seeing their wonderful productions. He is missed by all of us in the office.

We welcomed two new employees to AAPT: Leticia (Leti) Marquez, Registrar and Logistics Coordinator, and Kelsey Sheridan, Marketing Coordinator. Leti replaces Pearl Watson who recently retired. Leti comes with prior experience with member societies. Kelsey replaces Stefanie Wills. Kelsey has previously volunteered

for an education nonprofit overseeing its fundraising and marketing activities. Kelsey served as a high school biology teacher immediately prior to coming to AAPT! You may have already seen Kelsey's work on social media keeping you informed on AAPT activities and the physics education community.

"The report, Inspire to Lead; Engaging K-12 Teachers as Agents of National Change in Physics Education, was endorsed by the Board of Directors and published."

In June we launched a new e-commerce portal which is the interface that members use to conduct many financial transactions such as renewing your membership, registering for a meeting, purchasing items from the Physics Store, and making donations. This is the first step in moving to a new web design for aapt.org. We anticipate that the new website will be

more streamlined and provide easier access to AAPT resources and information. Watch for the new website late in 2018!

The report, *Inspire to Lead: Engaging K-12 Teachers as Agents of National Change in Physics Education*, was endorsed by the Board of Directors and published. This report was produced by the Physics Master Teacher Leaders (PMTL) Task Force, a group of 17 master physics teachers organized by K-12 Program Manager Rebecca Vieyra. The PMTL Task Force recognized the need for networked physics teacher leadership to improve the quality and quantity of K-12 physics education. The report proposes to design three programs that address the three priority areas set forth in the report: a mentoring and induction program, a vertical alignment project for teaching physics for all, and a support and advocacy program to build teacher agency. All of the areas are "for teachers, by teachers." Look for new projects in the upcoming years based on the three priority areas.

The participation of women in physics and engineering has been a topic of concern for decades. In the new STEP UP 4 Women in Physics project, two research universities (Florida International University and Texas A&M-Commerce) and the two largest national organizations in physics (American Physical Society and American Association of Physics Teachers) are working together to mobilize a large number of high school physics teachers nationally to attract and recruit female students to a physics-related career using research-informed and field-tested classroom practice that improve female students' physics identity. This will ultimately aid in closing the gender gap. We hope it will result in the most significant increase in women within the field of physics in history. This project is funded by the National Science Foundation grant #1720869. For more information, see <https://www.aps.org/programs/education/su4w/index.cfm>.

The AAPT/ALPhA Award recognizes outstanding work in the development of an advanced laboratory apparatus/experiment by an undergraduate physics student at his/her home institution within the U.S. In March, the AAPT/ALPhA Award Committee announced the first recipients of the award: Brandon Thacker, California State University, Chico (for the 2015 award), and Ryan Scott, Rochester Institute of Technology (for the 2016 award). Ryan Scott, under the guidance of faculty supervisors Edwin E. Hach, III and Stefan Preble, was recognized for his project on the Hong-Ou-Mandel effect. Ryan developed this advanced laboratory experiment at the Rochester Institute of Technology. Brandon Thacker, under the guidance of faculty supervisor Eric Ayars, was recognized for his project on the mechanical chaotic oscillator.

"In March, the AAPT/ALPhA Award Committee announced the first recipients of the award: Brandon Thacker, for the 2015 award, and Ryan Scott, for the 2016 award."

Brandon developed this advanced laboratory experiment at California State University, Chico. Both Ryan and Brandon and their advisors were presented the awards at the AAPT 2017 Summer Meeting in Cincinnati.

AAPT hosted the U.S. Delegation to the IUPAP International Conference on Women in Physics 2017 in Birmingham, U.K. The Delegation prepared a poster and paper for the conference's proceedings on the challenges that women physicists face in the workplace such as microaggressions, active discouragement, poor advising, inadequate acknowledgement of achievements, and sexual harassment. The poster and paper also outline a few approaches to enhance the culture in

physics which can lead to gender equity, social equity, and improved social justice for many people, not just women. Short bios for each of the delegates can be found at <http://www.uswip.org/6th/Delegation.html>. Another outcome of the U.S. Delegation was the Gender Bias in Physics Forum (<https://genderbias.compadre.org>). The Gender Bias in Physics Forum is a space where women and people who are gender and sexual minorities can share experiences of gender and sexuality bias in physics, find resources, and report responses to bias. Resources on reducing gender bias are available on the site. This project is funded by the National Science Foundation grants #1419453 and #1661340.

The Board approved the Event Participation Code of Conduct (CoC) in 2016 (http://aapt.org/aboutaapt/organization/code_of_conduct.cfm) as well as a form for reporting incidents. We have now held three national meetings (and other events) under the Code. Five cases were submitted and resolved. Below is a summary of actions that were taken:

- One incident was deemed outside the realm of the CoC and no action was warranted.
- Three incidents resulted in letters of notification and education submitted to the respondents.
- One incident resulted in the respondent voluntarily withdrawing from the AAPT activity.

We continue to review the processes that are in place to provide a safe and inclusive environment for all attendees of AAPT activities and meetings. We encourage you to review the CoC and let us know how we can improve.

Despite having a busy and productive year, AAPT faces a number of challenges. The Association continues to experience a decline of membership especially in the K-12 teacher constituency. Older members are committed to AAPT but it is hard to get new members to join. Early career physics educators do not see the same value to belonging to a professional society as our more senior members. This is a phenomenon being experienced by many other professional societies. We rely on current members to articulate the value of an AAPT membership. We hope you will assist AAPT in bringing in new members.

We do have good news to share. AAPT continues to be healthy financially. Fiscal year 2017 ended with a very small deficit in operations and the reserves continue to grow. We hope you continue to see value in membership and continue to renew. We also ask that you consider making a contribution to the annual fund or to a program that resonates with you (see website for complete list). Finally, spread the word about the value of an AAPT membership to your colleagues (especially those entering the profession), friends, and students. AAPT is stronger with a robust and diverse group of members.



Beth A. Cunningham
Executive Officer

Publications (people updated)

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 (January - August 2017)

Thomas J. Bensky, Assistant Editor (January - August 2017)

Richard Price, Assistant Editor (January - August 2017)

Richard Price, Editor, Massachusetts Institute of Technology (beginning September 2017)

Joseph D. Romans, Assistant Editor (beginning September 2017)

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

David P. Jackson stepped down from the position of editor in September and Richard Price of Massachusetts Institute of Technology became editor.



AMERICAN JOURNAL OF PHYSICS STATISTICS

- 12 issues—January–December 2017 (Volume 85)
- 976 pages, 767 reviewers, 85 papers published—13% acceptance rate
- 5 open access articles
- 7,939 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 - 3 letters

Resource Letters Editorial Board: Ruth W. Chabay, Elizabeth George, Shane L. Larson, Heather J. Lewandowski, Gordon P. Ramsey, Jan Tobochnik

Research in Physics Education - 6 articles

Computational Physics - 2 articles

Apparatus and Demonstration Notes - 7 articles

Book Reviews - 18 reviews

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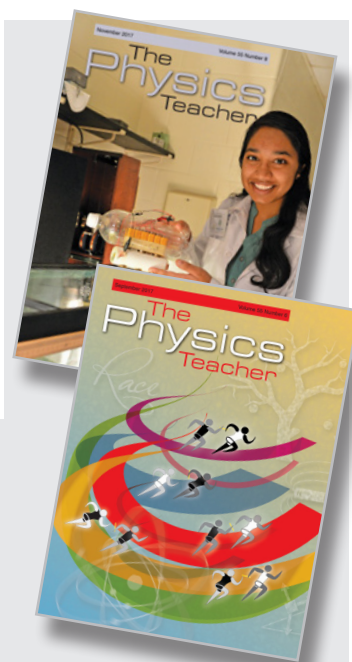
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University of Massachusetts

Daniel V. Schroeder
Weber State University

THE PHYSICS TEACHER (TPT.AAPT.ORG)

Gary D. White, Editor, *The George Washington University*

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. In the February 2016 issue a Call for Papers was issued on the topic of race and physics education, an invitation to write and submit manuscripts to *TPT* covering as many facets of the issue as can be imagined. Geraldine Cochran was recruited as co-editor for this unique collection shortly thereafter, and articles submitted in response to the call that successfully made it through the *TPT* double-blind peer-review process were featured in the fall of 2017. See the opening editorial by Geraldine Cochran and Gary White in the September 2017 issue of *TPT* for more details.



COLUMN EDITORS

And the Survey Says...

Susan C. White, AIP, College Park, MD

AstroNotes

Joe Heafner, Catawba Valley Community College, Hickory, NC

Fermi Questions

Larry Weinstein, Old Dominion University, Norfolk, VA

Figuring Physics

Paul G. Hewitt, City College of San Francisco, San Francisco, CA

iPhysicsLabs

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

Little Gems

Chris Chiaverina, New Trier High School, Winnetka, IL

Physics Challenge for Teachers and Students

Boris Korsunsky, Weston High School, Weston, MA

Talkin' Physics

Dolores Gende, North Broward Preparatory School, Coconut Creek, FL

Technology in the Classroom

James Lincoln, Southern California Section of AAPT, Newport Beach, CA

WebSights

Dan MacIsaac, SUNY-Buffalo State College, Buffalo, NY

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College Park, MD

THE PHYSICS TEACHER STATISTICS

- 9 issues—January–May, September–December 2017 (Volume 54)
- 592 pages, 716 reviewers, 111 papers, and 93 contributions to monthly columns (103 international authors/co-authors)—34% acceptance rate
- 7,589 individual and institutional subscriptions
- Approximately 40% of subscribers teach at the college and university level and 33% teach at the high school level. The remaining 27% are scientists at research facilities, students, and other interested members of the physics community.

Electronic Communications



AAPT/ComPADRE provides digital library services to the Physics Education community. It is designed to help educators, researchers, and students in physics find, use, and share high quality educational resources. AAPT/ComPADRE delivers an infrastructure of web-based collections and services tailored to specific user needs. Many of the efforts of the library involve collaboration with other groups, organizations, and development projects in physics education.

AAPT/ComPADRE Development, Infrastructure and Content Projects:



IPLS Portal: A major effort in 2017 is the design and development of the “Living Physics Portal”, led by Sam McKagan as the project manager and involving experts in physics for the life sciences across the country. This NSF-funded project is in the design and development phase when decisions of content organization, submission and review processes, content descriptions, user testing, and interface design are critical. The programming and implementation of the database and web interface has begun. The back-end information architecture, user database, and file system have been completed along with the styling and page design of the front-end. The goal is to have a beta version of the portal available to users in the Fall of 2018.

ComPADRE Books: The ComPADRE Books interface has been used to deliver several different types of publications. Caroline Hall and Rebecca Vieyra have developed a range of “Digi-kits”, lesson plans with associated digital resources, to support Middle School and High School science. Future directions include a focus on energy concepts. Wolfgang Christian and collaborators have used the books interface as one of several ways to distribute content.

PICUP: The PICUP collaboration for increasing the inclusion of computation in the physics curriculum is now focused on a submission, editorial, and peer review processes. Updates have also been made to support PICUP workshops and in response to feedback from these workshops. There are currently 54 exercise sets available on PICUP, 33 of them reviewed, covering mechanics, E&M, thermal physics, quantum mechanics, labs, etc.



PhysPort: Usage of Physport, research-based resources for physics instructors, has continued to increase. Many instructors are taking advantage of the increasingly powerful Assessment Database and Data Explorer services provided on PhysPort.

Advanced Labs: The Advanced Labs collection has been updated to highlight “Immersion” resource, add video links, and integrate the AAPT Laboratory Recommendations as additional metadata for content.

Adopt-a-Physicist: A successful Adopt-a-Physicist session was held in October in collaboration with the Society for Physics Students. More than 16,000 sessions were hosted during this event, with very positive participant reviews.

Gender Bias in Physics: The ComPADRE staff developed and delivered a website for information collection and sharing experiences of gender bias in physics this year, in collaboration with the US Delegation to the International Conference on Women in Physics.

Traffic Report:

Overall, ComPADRE served about 512,000 users in 685,000 sessions in 2017, with between 60,000 and 65,000 sessions per month during the school year. More than one fourth of the users are returning users, although this number is likely somewhat larger than reported by Google Analytics. Traffic decreased slightly from previous years, and changes are being planned to the collections in consideration of this decrease.

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.

- A new diversity project called “HERStories” which promotes women in the sciences
- With the addition of a K-12 Program Manager on AAPT’s staff a new K-12 Portal was organized providing easier access to resources available to members who teach elementary and high school science and physics.

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.

For 2017 aapt.org had:

- 467,422 visits • 1,440,066 pageviews • 3.08 pages per visit
- 271,570 new visitors All from 209 countries/territories
#1 U.S., #2 India, #3 Brazil, #4 Canada, #5 Pakistan

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 begun to create a new membership website (RISE)

MEETING PRESENTATIONS

AAPT continues 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



eNNOUNCER August 2016

AAPT News

2016 AAPT Board of Directors Election

The election of officers for the AAPT Board of Directors will begin in September. Watch for the exact dates in next month's eNNOUNCER. Members will receive instructions through email or, if no email is on file, through the mail to help you vote electronically. Be sure your email address and membership are current so you can participate. [Learn more](#) about the candidates.

2017 AAPT Winter Meeting

The 2017 AAPT Winter Meeting will be held in Atlanta, Georgia from February 18-21 at the Atlanta Marriott Marquis. Abstracts submission for the winter meeting will open on August 4. Please [click here](#) between August 4th and September 15 to submit your contributed talk or poster abstract. This is a great opportunity to present your research or share your ideas with your colleagues.

AAPT Code of Conduct

You may have read recently in the June 2016 Physics Today (pp. 30-32) and in the news about harassment issues at professional society meetings. In light of these discussions, the AAPT Board of Directors and Executive Office affirms that the Association expects the highest level of professional behavior of everyone at its meetings and events. We all want AAPT meetings and workshops to be productive and welcoming for all and that means we all need to treat each other with respect and dignity. If you experience any unethical behavior or see such behavior directed towards someone else at the meeting, you may report that behavior to one of the AAPT staff so that appropriate action can be taken. AAPT will soon release a formal Code of Conduct and lay out the

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AAPT News

- 2016 AAPT Board of Directors Election
- 2017 AAPT Winter Meeting
- AAPT Code of Conduct
- eAlliances: Uniting isolated women physicists and astronomers
- AAPT Privacy Statement
- AAPT/PTRA leadership workshop
- Webinar K-12 STEM
- 17 Educators Selected for Physics Master Teacher Leader Taskforce
- AAPT Member Spotlight
- AAPT Career Center offers FREE postings
- Computational Physics at AAPT Section Meetings

AAPT Programs

- 2016 U.S. Physics Team Scores 2 Gold and 3 Silver Medals at 47th International Physics Olympiad
- 2016 High School Physics Photo Contest
- The Frederick and Florence Bauder Endowment
- Physics and Astronomy Department Chairs - New Faculty Workshop Nominations
- Getting the most from your Membership

In the News

- Let's Get to PhysCont!
- APS National Mentoring Community: Call for

2017 TOP AAPT NEWS STORIES

Listed below are highlighted news stories for 2017 from the eNNOUNCER. To read the full story go to <http://www.aapt.org/aboutaapt/ennouncer/index.cfm>.

<p>JANUARY</p> <ul style="list-style-type: none"> • Winter Meeting Service Awards • Richtmyer Memorial Lecture Award - Jay M. Pasachoff • eAlliances Registration Site goes live <p>FEBRUARY</p> <ul style="list-style-type: none"> • The AAPT/APS JTUP Programs reports released • Email listserv for physics department chairs at primarily undergraduate institutions and primarily teaching institution <p>MARCH</p> <ul style="list-style-type: none"> • First AAPT/ALPHA Awardees Named <p>APRIL</p> <ul style="list-style-type: none"> • Klopsteg Memorial Lecture Award: John C. Brown 	<ul style="list-style-type: none"> • Millikan Medal Awarded: Kenneth Heller • Halliday and Resnick Award: Cindy Schwarz • Paul W. Zitzewitz Excellence in K-12 Teaching Award -J. Mark Schober <p>MAY</p> <ul style="list-style-type: none"> • Change to By-Laws: Membership Category Title Change • AAPT/PTRA receives an Idaho Math-Science Partnership Grant <p>JUNE</p> <ul style="list-style-type: none"> • Homer L. Dodge Citation for Distinguished Service to AAPT: Joseph Kozminski, Duane Merrell, Paul Stanley, Toni Sauncy, and William Reitz 	<ul style="list-style-type: none"> • 2017 AAPT Fellows <p>JULY</p> <ul style="list-style-type: none"> • U.S. Physics Team Members Selected To Participate in the 2017 IPHO <p>AUGUST</p> <ul style="list-style-type: none"> • 2017 U.S. Physics Team Shines with Three Gold and Two Silver Medals <p>SEPTEMBER</p> <ul style="list-style-type: none"> • Jon Anderson appointed as AAPT PhysicsBowl Coordinator. Myra West is the Associate Coordinator. • <i>The Physics Teacher</i> themed collection in on Race and Physics Teaching. <p>OCTOBER</p> <ul style="list-style-type: none"> • Applications Accepted for Jossem Fund Grants 	<p>NOVEMBER</p> <ul style="list-style-type: none"> • Oersted Medal - Barbara L. Whitten • Richtmyer Memorial Lecture award - Mark Beck • John David Jackson Award for Excellence in Graduate Physics Education - Mehran Kardar <p>DECEMBER</p> <ul style="list-style-type: none"> • Results of the 2017 Board of Directors Election • Homer L. Dodge Citation for Distinguished Service to AAPT: Jon Anderson , Nancy Easterly, Mary Ann Hickman Klassen, Daniel Schroeder and Steve Spicklemire
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National Meetings



WINTER MEETING

February 18–21, 2017, Atlanta, GA

Statistics:

There were 785 attendees, 20 exhibitors, 52 sessions, 21 workshops, 4 Tutorials, 6 Topical Discussions, and 87 posters.

Program Committee Chair

Gordon P. Ramsey

Paper Sorters:

Sean Bently, Society of Physics Students
Anne Huntress, South Lewis Central School

Lila Adair, Piedmont College

Andrew Boudreaux, Western Washington University

Amy Robertson, Seattle Pacific University

Brianna Santangelo, The College of New Jersey

Ben Jenkins, University of West Georgia

Local organizer:

Michael Schatz, School of Physics, Georgia Institute of Technology, for organizing the workshops

Lila M. Adair, Piedmont College

Don Franklin, Hampton, GA

Plenaries

The plenary talks were given Saturday at Georgia Tech by Stephen Ramaden, Solar Astronomy, space programs, particle physics and the Physics of Music by Michael Ruiz. On Sunday plenary sessions featured “Mars 2020 Mission Overview and the Importance of Planetary Protection” by Moogega Stricker and Ken Bloom speaking on “Discovering the Quantum Universe at the Large Hadron Collider.”

The 2017 Richtmyer Memorial Lecture Award was presented to Jay M. Pasachoff, Field Memorial Professor of Astronomy and Director of the Hopkins Observatory at Williams College, Williamstown, MA. His lecture was “Observing the Great American Eclipse of August 21, 2017.”

Jan Tobochnik, recipient of the 2017 Oersted Medal addressed “The Changing Face of Physics and the Students Who Take Physics.” Tobochnik is Dow Distinguished Professor in the Natural Sciences, Kalamazoo College, Kalamazoo, MI.

Highlights

The headquarters hotel for the 2017 Winter Meeting was the Atlanta Marriott Marquis, located in Peachtree Center. Convenient to many of the popular cultural, sports, shopping, and dining venues, the location offered attendees opportunities to explore and enjoy the city and that famous Southern Hospitality.

The sessions, tutorials and workshops covered a wide range of interests and levels from the novice to the experienced teacher. The Georgia Institute of Technology was host to more than 20 workshops on Saturday and Sunday with selection ranging from Dark Matter and Neutrinos to Low-Cost, At-Home Labs for School-based or Online Courses. The Trans-Disciplinary Project-based Instruction in Biology and Physics workshop was held at Spelman College. Commercial Workshops were hosted by PASCO Scientific, Expert TA, Lab4Physics, and Vernier. AAPT sponsored a special workshop, Safety, Respect and Inclusion: How To Be Part of the Solution. The event was in keeping with the association’s position on “Supporting and Enhancing Diversity and Inclusiveness in AAPT.”

Early arriving attendees also had the opportunity to participate in a tour of the Fernbank Science Center, featuring a new planetarium show, a collection of tektites, an Aeronautics Education Laboratory, an electron microscope lab, and an authentic Apollo spacecraft from the unmanned Apollo 6 Saturn V test flight.

Attendees also enjoyed a variety of social opportunities such as the Early Arrivals Networking Event, the Winter Meeting Dance Party, the First Timers’ Gathering, Meet-up for Members and Supporters of LGBTQ Community, Game Room Night, SPS Undergraduate Awards Reception, the AAPT Fun Run/Walk, the Early Career Speed Networking event, and the High School Teachers’ Lounge Member service to AAPT was recognized with the presentation of the Homer L. Dodge Citations for Distinguished Service to AAPT to Ernest R. Behringer, Richard Gelderman, Sharon Kirby, Kenneth S. Krane, and Ann M. Robinson.



During the annual Meeting of the Members, on Sunday evening, a motion that the term “regular member” be changed to “professional member” in Section 3.01 of the By-Laws was approved. This change reflects the professional identification and commitment of members to our organization, describing AAPT membership in a way that idealizes how a person would wish to describe themselves in their professional identification.



PHYSICS EDUCATION RESEARCH (PER)

PER LEADERSHIP ORGANIZING COUNCIL

Natasha Holmes, Chair
 Luke D. Conlin, Vice Chair/Treasurer
 Cassandra Paul, ex officio
 (chair of AAPT Research in Physics
 Education Committee)
 Vashti Sawtelle, Mini-Grants
 Chandra Turpen, GOER Liaison
 Eric Williams, PERCoGS representative
 Genaro Zavala, PERC Proceedings review

PERC ORGANIZING COMMITTEE

Steve Kanim, New Mexico State
 University
 Suzanne White Brahmia, University of
 Washington
 Michael Loverude, California State
 University Fullerton
 John Thompson, University of Maine

PER Conference 2017—Cincinnati, Ohio

July 26-27, 2017

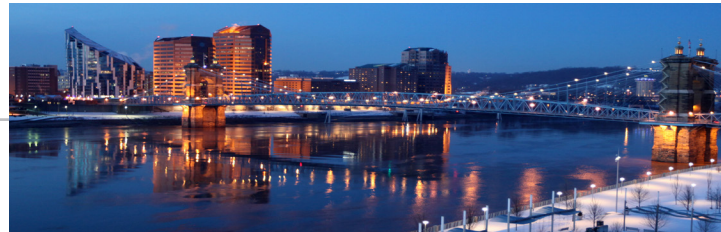
Mathematization and Physics Education Research
 (385 attendees)

Plenary Sessions:

Quantitative reasoning and mathematical modeling in an introductory calculus sequence, Michael Oehrtman, Oklahoma State University
Student Understanding and Symbolization of Eigentheory, Megan Wawro, Virginia Tech

The number of publications that are focusing on mathematics in physics is increasing, and there are increasing connections between PER and the Research in Undergraduate Mathematics Education (RUME) community. As a result, the committee chose to highlight mathematization research at the 2017 PERC in Cincinnati. By mathematization, we refer to the spontaneous tendency to use mathematical concepts to quantify and make sense of the physical world. It is not about how well people can perform the procedures of mathematics. Rather, mathematization describes how people conceptualize the meaning of mathematics in the context of physics.

National Meetings



SUMMER MEETING

July 22–26, Cincinnati, OH

Statistics:

There were 1,173 attendees, 27 exhibitors, 83 sessions, 34 workshops, 6 topical discussions, and 206 posters.

Program Committee Chair

Gordon P. Ramsey

Paper Sorters:

Dan Beeker, Indiana University-Bloomington
Tom Carter, College of DuPage
Brad Conrad, Society of Physics Students
Marla Glover, Rossville High School
Amber Henry, LIGO
Charlie Holbrow, Massachusetts Institute of Technology
Mel Sabella, Chicago State University
Elizabeth Walker, North Cobb High School

Local organizers:

Kathleen M. Koenig, Alexandru Maries, and Henry Leach, University of Cincinnati



Plenaries

The Klopsteg Memorial Lecture Award was given to John C. Brown, University of Glasgow, Scotland. His talk, *Black Holes and White Rabbits*, discussed the nature of gravity and its extremes across the universe explaining what the term “Black Hole” means, and how and where they form. It also addressed how we detect them and demonstrated many of their weird properties and effects on their surroundings.

Kenneth Heller, University of Minnesota, received the 2017 Millikan Medal for his notable and creative contributions to the teaching of physics. His talk, *Can We Get There from Here?*, discussed AAPT’s understanding of the goals of physics instruction and why it needs improving.

The APS Plenary, co-sponsored by the American Physical Society Forum on Education, featured Francis Slakey from Georgetown University. His talk, *The Effective Force*, focused on his experiences from a decade of crisscrossing the globe and witnessing social challenges. Based on those travels, Slakey restructured his physics classes at Georgetown University to enable students to take meaningful action on social issues.

The other invited plenary speaker was Julianne M. Pollard-Larkin, Assistant Professor of Medical Physics at the University of Texas, MD Anderson Cancer Center in Houston, TX. Her talk, *The Future of Image-Guided Radiotherapy* presented advances in image-guided radiotherapy (IGRT) that have allowed for dose escalation and more precise radiation treatment delivery. Each decade brings new imaging technologies to help improve radiotherapy patient setup.

Highlights

Preparation for the August 21, 2017 Solar Eclipse was an important part of the sessions and events held during this Summer Meeting. These included the Effects of the Sun: Solar Planetarium Show (Saturday, July 22,); Solar Fest (Monday, July 24), and the talk by this year’s Klopsteg awardee, John C. Brown, 10th Astronomer Royal for Scotland.

AAPT/PTRA held its Summer Leadership Institute July 19-22 at the Cincinnati State Technical College. The Summer Institute provides annual training that focuses on updates in pedagogy, technology, and content. This professional development for the leaders allows the participants to become certified in specific content areas that they may then offer to peers in their own district or state.

The University of Cincinnati Blue Ash College hosted more than 20 physics professors from across the U.S. to the New Faculty Experience (NFE) Commencement Conference July 21–23. The meeting was designed to help newer physics professors explore research-based instructional strategies (RBIS) that help effectively teach physics and astronomy.

American Journal of Physics Editor, David Jackson, was recognized for his years of service at a special presentation held during the AAPT Publications Committee.

Some attendees took advantage of the location and enjoyed a tour of the Cincinnati Reds Stadium and a night on the Ohio River aboard the River Queen Riverboat. In addition, attendees enjoyed an evening tour of the Cincinnati Observatory. Nearly 400 Physics Education Researchers participated in the post-meeting PER Conference, that focused on research methodology and PER’s role in how to approach a research study.

The AAPT Fun Run/Walk continues to be a popular event providing a break from the intense learning format of the meeting and the Speed Networking event, providing an opportunity for new physics educators to interact “one on one” with seasoned professionals, continued to grow. SM 17 registrants also enjoyed a Cincinnati Pub Crawl with colleagues. Much anticipated features of the Summer Meeting, The High School Physics Photo Contest and the Apparatus Competition are always highlights and this year they enjoyed extra attention due to their convenient location in the convention center.



National Meetings continued

The Halliday and Resnick award for Excellence in Pre-College Teaching was presented to Cindy Schwarz from Vassar College. Her talk, *What Can We Do in the Subatomic Zoo?*, came out of her Vassar course and book, *A Tour of the Subatomic Zoo: A Guide to Particle Physics*. She discussed what physics teachers can do with their students to help them learn (or relearn) about the standard particle physics model and beyond. Since the students for this course were everything but physics majors, she needed to be very creative as the course developed over the years. In this talk she discussed two parts of the course that were unique and also could be used/adapted in both high school and college settings; the final project and the debate project. Initially their final project assignment was to write a short story or poem with subatomic particles as characters. She shared some of the research presentations by her student groups, which included local business owners and residents, an environmental impact group, taxpayer lobbyists, foreign and international physicists.

The 2017 Paul W. Zitzewitz Award for Excellence in Pre-College Physics Teaching was presented to J. Mark Schober from Trinity School in New York City. His talk was *Sharing Your Expertise*. For many physics educators, he said, physics is only one of several subjects they teach and nearly 60% of those teaching physics have degrees in fields other than physics or physics education. Such rich academic diversity needs a vibrant professional support community that is accessible, frequent, and relevant. He shared some stories that identified and enabled AAPT members to share their expertise, expanding the Association's positive influence to the other 75% of high school physics teachers. The stakes are high—the future of science literacy, and physics' foundational role in scientific understanding, depends upon AAPT.

The Summer 2017 recipients of the Homer L. Dodge Citations for Distinguished Service to AAPT were Joseph Kozminski, Lewis University, Romeoville, Illinois; Duane Merrell, Brigham Young University, Provo, Utah; Paul Stanley, Beloit College, Beloit, Wisconsin; Toni Sauncy, Texas Lutheran University in Seguin, Texas; and William Reitz, Hoover High School (retired), North Canton, Ohio.

Workshops and Programs

WORKSHOP FOR NEW PHYSICS AND ASTRONOMY FACULTY

*June 12-15, 2017 and
November 2-5, 2016*

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 221 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.

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/



PHYSICS TEACHER RESOURCE AGENTS (AAPT/PTRA) PROGRAM

Read more online at: www.aapt.org/PTRA



Workshops were held during the AAPT 2017 Summer Institute in conjunction with the AAPT Summer Meeting in Sacramento, CA.

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.



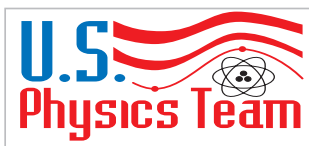
2017 PTRA COMMITTEE

Karen Jo Matsler, Program Director

OVERSIGHT COMMITTEE

Pat Callahan, Earl D. Blodgett, Janie Head, Tommi Holsenbeck, Tom O'Kuma, Kelly O'Shea, Ed Price, Beth A. Cunningham, Ex Officio, Rebecca Vieyra, Ex Officio

2017 UNITED STATES PHYSICS TEAM



Read more at: www.aapt.org/physicsteam/2017

The 48th International Physics Olympiad that was held in Yogyakarta, Indonesia, July 16-24, 2017. Themed, “Joyful Camaraderie Beyond the Speed of Light!,” the nine day competition among the world’s top high school physics students consisted of an Experimental Exam and a Theoretical Exam. The team also experienced several cultural outings and visits.

Several countries won five gold in this difficult exam contest. The USA tied with four other countries, winning four gold and one silver medal: Vietnam, Romania, and India.

The participants representing the 2017 U.S. Physics Team were:

- Shreyas Balaji, Sugar Land, TX, Gold
- Jimmy Qin, Sanford, FL, Gold
- Sanjay Raman, Seattle, WA, Silver
- Kye Shi, Watsonville, CA, Gold
- Michelle Song, Fremont, CA, Silver
- Srijon Mukherjee, Noida, Noida UP, Silver

DIRECTOR

Paul Stanley, Beloit College

ACADEMIC COACHES

The U.S. Team was led by Paul Stanley of Beloit College, JiaJia Dong of Bucknell University, and David Fallest of Mary Washington University.



The traveling team, from left to right, Jimmy Qin, Sanjay Raman, Michele Song, Shreyas Balaji, Kye Shi

2017 US PHYSICS TEAM

Shreyas Balaji, John Foster Dulles High School Sugar Land, TX; Mike Bao, Troy High School, Fullerton, CA; Edward Cen, Bellaire High School, Bellaire, TX; Phil Chen, University HS - Irvine, Irvine, CA; Matthew Guo, Evergreen Valley High School, San Jose, CA; Tiffany Huang, Saratoga High School, Saratoga, CA; Kiran Linsuain, Homeschool, Pittsburgh, PA; Steven Liu, High Technology High School, Lincroft, NJ; Faraz Masroor, Gulliver Schools, Pincrest, FL; Srijon Mukherjee, Amity International School, Noida, Noida, UP; Pranav Murugan, Texas Academy of Math and Science, Denton, TX; Anthony Ou, Carmel High School, Carmel, IN; Aditya Parulekar, Westwood High School, Austin, TX; Jimmy Qin, Seminole High School, Sanford, FL; Sanjay Raman, Lakeside School, Seattle, WA; Kye Shi, Monte Vista Christian School, Watsonville, CA; Michelle Song, Mission San Jose High School, Fremont, CA; Andrew Wang, Phillips Andover Academy, Andover, MA; Handong Wang, Los Gatos High School, Los Gatos, CA; Catherine Wu, Saratoga High School, Saratoga, CA; Haobang Yang, John P Stevens High School, Edison, NJ; Jerry Zhang, Marquette High School, Chesterfield, MO

PHYSICS BOWL SPONSORS

AAPT
Arbor Scientific
Cambridge University Press
CPO Science
Educational Innovations, Inc.
John Wiley & Sons
PASCO Scientific
Princeton University Press
Turner Publishing Company
Vernier Software & Technology
WebAssign

PHYSICSBOWL

AAPT PHYSICS BOWL

Read more at: www.aapt.org/Programs/contests/physicsbowl.cfm

This year there were almost 4500 students participating from more than 280 schools across the United States and Canada, China, and Spain. Michael C. Faleski served as the PhysicsBowl Academic Coordinator. China participated for the third year.

2017 TOP 10 GLOBAL WINNERS

#	SCORE	STUDENT, SCHOOL, CITY, STATE
1	38	PATRICK Y. LIU, SpringLight Education Institute CA
2	36	LU WANG, Beijing New Oriental Foreign Language School at Yangzhou Jiangsu
3	36	JASON LIU, Stamford Polytechnic at Beacon CT
4	36	VINCENT W. BIAN, Poolesville High School MD
5	36	TONGYU ZHAO, Beijing New Oriental Foreign Language School at Yangzhou Jiangsu
6	36	YIFAN ZHU, Shanghai Foreign Language School Shanghai
7	35	HAICHUAN YANG, The High School Affiliated to Renmin University of China Beijing
8	35	JUNZHE ZHU, Shanghai Starriver Bilingual School Shanghai
9	34	YAO CHEN, Jiangsu Provincial Liangfeng Senior Middle School International Department Jiangsu
10	34	KEYUAN GONG, Jiangsu Provincial Liangfeng Senior Middle School International Department Jiangsu

PHYSICSBOWL ADVISORY BOARD

Michael Bush, Beverly Trina Cannon,
Michael C. Faleski, Sean Flaherty,
Warren Hein, Thomas Herring, Joel
Klammer, Andrzej Sokolowski, and
Courtney Willis

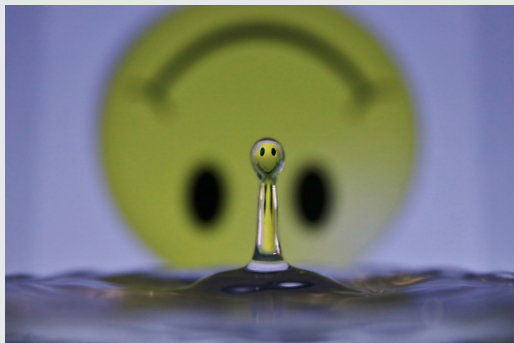
2017 High School Physics Photo Contest

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 over 700 submissions, the 100 finalist photos were selected, displayed, and judged during the 2017 Summer Meeting. See www.aapt.org/Programs/contests/winners.cfm?theyear=2017 for information on the following overall winners of 2017.



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



SECOND

THIRD



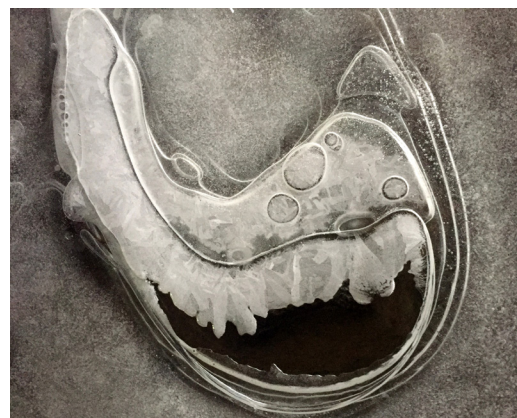
Natural photos are those that involve everyday situations that may demonstrate a variety of physics concepts. Any spontaneous event is considered natural.

FIRST



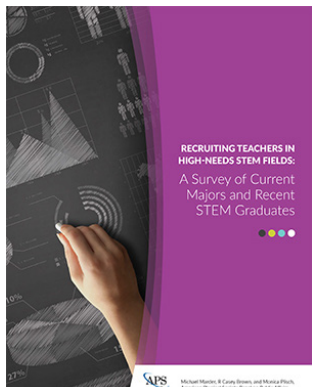
SECOND

THIRD



Collaborative Projects

PHYSTEC ANNOUNCED PUBLICATION OF RECRUITING TEACHERS IN HIGH-NEEDS STEM FIELDS: A SURVEY OF CURRENT MAJORS AND RECENT STEM GRADUATES



The United States faces persistent shortages of appropriately trained middle and high school STEM teachers in high-needs fields, particularly physics, chemistry, and computer science. The American Physical Society, American Chemical Society, Computing Research Association, and Mathematics Teacher Education Partnership surveyed over 6,000 current and recent majors in our disciplines.

The goals were to:

- Investigate the attitudes and opinions of undergraduate majors and recent graduates from high-needs STEM fields towards teaching.
- Identify incentives that are both feasible and likely to be effective based on the responses of students showing some interest in teaching.
- Develop recommendations for the professional societies and disciplinary departments.

The main findings were:

- Around half of STEM majors indicate some interest in teaching, suggesting a significant pool from which more STEM teachers could be recruited.
- For STEM majors with some interest in teaching, 80% say that various financial incentives would increase their interest. They report the most powerful incentive would be an increase of teacher salary.
- Undergraduate STEM majors underestimate teacher compensation, and the salaries they report would interest them in teaching are close to actual salaries.
- Students are most inclined to consider teaching in departments where the faculty discuss teaching as a career option.
- Mathematics majors indicate the most interest in teaching and respond most strongly to incentives. Chemistry and physics majors show less interest and physics majors respond less strongly to incentives. Computer science majors show the least interest.
- The aspects of teaching that most worry STEM undergraduates are substantially different from the aspects of teaching that worry practicing teachers.

The recommendations to professional societies and disciplinary departments are to:

- Impress upon university faculty and advisors in STEM disciplinary departments the importance of promoting middle and high school teaching with their undergraduate majors and graduate students, and of providing them accurate information about the actual salary and positive features of teaching.
- Support high-quality academic programs that prepare students for STEM teaching, and expand good models to more universities. Strong programs provide improved coursework, prevent certification from requiring extra time, and support their students and graduates financially and academically.
- Support financial and other support for students pursuing STEM teaching.
- Advocate for increases in annual compensation, including summer stipends, on the order of \$5,000 - \$25,000 for teachers in the hardest to staff STEM disciplines.
- Support programs that improve the professional life and community of STEM teachers.

PHYSICS DAYS AT NSTA

Local AAPT Sections hosted Physics Day at nearby NSTA area meetings held in Baltimore, MD, Milwaukee, WI, and New Orleans, LA.

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 was represented at each event by the local section, shared appropriate materials, and recruited science teachers to become members.

- Baltimore, MD presenters: Robert Morse, Gregory Good, David Wright, Laurence Weinstein, Benjamin Dreyfus, and Katya Denisova,
- Milwaukee, WI presenters: Francis Halzen, Kate Miller, Jeff Paradis, Katherine Shirey, and Matthew Vonk,
- New Orleans, LA presenters: Kathy Holt, William Katzman, David Maiullo, Marco Cavaglià, Chadwick Young, Dana Browne, and Susan Meabh Kelly

PHYSTEC TEACHER OF THE YEAR

The PhysTEC Teacher of the Year program aims to recognize outstanding high school physics teachers and to demonstrate the impact and value of physics teacher preparation programs as members of PhysTEC. PhysTEC recognizes up to one local Teacher of the Year per PhysTEC institution and a single national Teacher of the Year. Awardees recognized by PhysTEC are points of pride for the physics teaching community.

Alexandra Boyd of Holly Springs High School in Holly Springs, North Carolina, was named the 2017 National PhysTEC Teacher of the Year. The selection committee noted her success as both a teacher and department chairperson in increasing AP Physics class enrollments in her school, especially in the numbers of young women taking physics. She is involved in science education beyond the classroom, and supports student learning by advising her school's Science Olympiad and Science National Honor Society.



NEW PHYSTEC FELLOWS PROGRAM

PhysTEC Fellows is a new program designed to provide access to national physics teacher preparation leaders, help Fellows to become more visible leaders in the community, and increase competitiveness for future funding opportunities.

The fellowship provides recognition and support for faculty looking to develop their physics teacher preparation programs. Fellows work with their institutional team and each other to develop and implement changes to their program. The Fellowship lasts approximately two academic years and first cohort will run 2018-2019.

Members of the 2018-2019 PhysTEC Fellows Cohort

Indiana University-Purdue University Fort Wayne: Mark Masters, Matthew Perkins

Texas A&M University-Commerce: William Newton, Robynne Lock

University of Houston: Donna Stokes, Paige Evans, Rebecca Forrest, Reggie Bain

Wright University: Jason A. Deibel, Eric Rowley, Beth Basista

Worcester Polytechnic Institute: Douglas T. Petkie, Rudra P. Kafle, Izabela R. Stroe, Shari Weaver

2017 PHYSTEC CONFERENCE

The 2017 Physics Teacher Education Coalition Conference, a joint effort of AAPT and APS, was held February 17, 2017 - February 18, 2017 at the Hyatt Regency Atlanta in Atlanta, Georgia.

The conference began with activities Thursday evening as well as a half day pre-conference session, "Next Gen PET Workshop" from 1:00pm - 5:00 pm on Thursday. Plenary Speakers were Michael Marder and Stamatis Vokos.

Michael Marder is Professor of Physics at The University of Texas at Austin. His research focuses on fracture of brittle solids. He has been co-Director of UTeach, the UT Austin program to prepare secondary STEM teachers, since it began in 1997, and has overseen its expansion to more than 40 universities across the United States. As a member of the American Physical Society Panel on Public Affairs, he has been coordinating a study of how STEM majors think about the prospect of teaching.

Stamatis Vokos is a professor in the Physics Department at Cal Poly State University at San Luis Obispo. Previously, he directed the Physics Education Research Group at Seattle Pacific University. Dr. Vokos has also held positions at the University of Cyprus, the University of Washington, and at the Argonne National Lab and Lawrence Berkeley Lab.

Dr. Vokos' research focuses on the improvement of the teaching and learning of physics from K-20, including teaching energy and support for effective K-12 curricula and formative assessment practices.

Dr. Vokos is chair of the National Task Force on Teacher Education in Physics (T-TEP). He has also served on the editorial board for Effective Practices in Preservice Physics Teacher Education; Teacher Education in Physics: Research, Curriculum, and Practice; Physical Review Special Topics: Physics Education Research; and was twice the co-editor of theme issues for the American Journal of Physics. At SPU, he co-led the provost's Academic Innovation Initiative. In 2015, he was a finalist for Teacher of the Year at Seattle Pacific.

2017 Awards and Grants

HANS CHRISTIAN OERSTED MEDAL

Jan Tobochnik, Kalamazoo College, Kalamazoo, MI

The Changing Face of Physics and the Students Who Take Physics



The Oersted Medal for 2017 was presented to Jan Tobochnik in recognition of his outstanding, widespread, and lasting impact on the teaching of physics through his contributions to the use of computer simulations to motivate active learning.

Tobochnik graduated summa cum laude from Amherst College in 1975 with a major in physics. He then went to Cornell University where in 1980 he obtained a Ph.D. in Physics. He joined the faculty at Kalamazoo College in 1985 where he currently holds the position of Dow Distinguished Professor in the Natural Sciences.

Within the physics community, Tobochnik is well known for his series of texts written with Harvey Gould that cover computer simulation methods at the introductory level and statistical and thermal physics at the intermediate level. In the early 1990's he was a practitioner of active learning methods, long before it became fashionable, and was busy developing software to assist student learning. Tobochnik's fluency in computational methods especially in the service of advanced thermal and statistical physics research has informed dozens of publications in refereed journals, columns in *Computers in Physics*, and a second textbook with Harvey Gould, *Statistical and Thermal Physics With Computer Applications*, the first book being *An Introduction to Computer Simulation Methods: Applications to Physical Systems* with co-authors Harvey Gould and Wolfgang Christian which is now in its third edition. He has also provided important professional services including co-editing the first ever theme issue of the *American Journal of Physics* (AJP), co-creating the Gordon Conference on Physics Research and Education series and co-chairing its first conference, co-editing the *Computer Simulations* section of *Computers in Physics*, and above all else, he had a successful ten-year stint (2001-2011) as the Editor of *American Journal of Physics* (AJP).

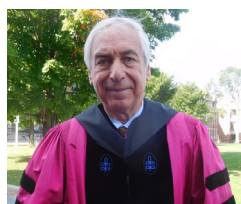
The full press release is available at http://www.aapt.org/aboutaapt/pressreleases/2017_AAPT_Oersted_Jan_Tobochnik.cfm.

RICHTMYER MEMORIAL LECTURE AWARD

Jay M. Pasachoff, Williams College, Williamstown, MA

Observing the Great American Eclipse of August 21, 2017

Pasachoff is recognized for outstanding contributions to physics and effectively communicating those contributions to physics educators. His talk entitled "Observing the Great American Eclipse of August 21, 2017," will



discuss some of the scientific results from the most recent eclipses. Pasachoff is an astronomer and is Field Memorial Professor of Astronomy at Williams College and the author of textbooks and tradebooks in astronomy, physics, mathematics, and other sciences.

After the Bronx High School of Science, he studied at Harvard, receiving his bachelor's degree in 1963, his master's degree in 1965, and his doctorate in 1969. He worked at the Harvard College Observatory and Caltech before going to Williams College in 1972.

Pasachoff has lectured widely, including a stint as a Sigma Xi Distinguished Lecturer. He is also Director of the Hopkins Observatory and past (2014–2015) Chair of the Astronomy Department at Williams.

Pasachoff has received several awards for teaching and the popularization of Astronomy through his writing of textbooks. To name two, Pasachoff received the 2003 Education Prize of the American Astronomical Society, and Pasachoff received the 2012 Prix-Jules-Janssen from the Société Astronomique de France. In addition, Pasachoff has been active in educational and curriculum matters. He is U.S. National Liaison to, and was President (2003–2006) of the Commission on Education and Development of the International Astronomical Union, has twice been Chair of the Astronomy Division of the American Association for the Advancement of Science, and has been on the astronomy committees of the American Astronomical Society (and its representative 2004–2017 to the AAAS), the American Physical Society, and the American Association of Physics Teachers.

The full press release is available at http://www.aapt.org/aboutaapt/pressreleases/2017_AAPT_Richtmyer_Memorial_Lecture_Award.cfm.

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

THE RICHTMYER MEMORIAL LECTURE AWARD IS GIVEN IN MEMORY OF FLOYD K. RICHTMYER, DISTINGUISHED PHYSICIST, TEACHER, AND ADMINISTRATOR. PROFESSOR RICHTMYER WAS ONE OF THE FOUNDERS OF AAPT AND SERVED AS ITS PRESIDENT. AS A TEACHER, AUTHOR, RESEARCH WORKER, AND DEAN, HE WAS THE GUIDE FOR MANY YOUNG PHYSICISTS WHO BECAME LEADERS OF AMERICAN SCIENCE AND HE HAS HAD A WIDE INFLUENCE ON THE DEVELOPMENT OF PHYSICS IN THE UNITED STATES. THE AWARD HAS BEEN GIVEN SINCE 1941 TO A PERSON WHO HAS MADE OUTSTANDING CONTRIBUTIONS TO PHYSICS AND EFFECTIVELY COMMUNICATED THOSE CONTRIBUTIONS TO PHYSICS EDUCATORS.

2017 Awards and Grants (cont.)

ESTABLISHED IN 1993 AND NOW NAMED FOR THE AUTHORS OF A VERY SUCCESSFUL COLLEGE-LEVEL TEXTBOOK ON INTRODUCTORY PHYSICS AND FUNDED SINCE 2010 PRIMARILY BY A GENEROUS ENDOWMENT FROM JOHN WILEY AND SONS, THE PUBLISHER OF THAT TEXTBOOK, THE DAVID HALLIDAY AND ROBERT RESNICK AWARD FOR EXCELLENCE IN UNDERGRADUATE PHYSICS TEACHING RECOGNIZES OUTSTANDING ACHIEVEMENT IN TEACHING UNDERGRADUATE PHYSICS, WHICH MAY INCLUDE THE USE OF INNOVATIVE TEACHING METHODS.



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

Cindy Schwarz, Vassar College, Poughkeepsie, NY
What Can We Do In The Subatomic Zoo?

The 2017 David Halliday and Robert Resnick Award for Excellence in Undergraduate Physics Teaching winner was Cindy Schwarz in recognition of her extraordinary accomplishments in communicating the excitement of physics to their students. John Wiley & Sons is the principal source of funding for this award, through its donation to the AAPT.

Schwarz earned her B.S. in Mathematical Physics at S.U.N.Y. at Binghamton (1980) M. Phil. in Physics at Yale University (1983), and her Ph.D. in Experimental Particle Physics, at Yale University (1985). She is a Professor of Physics in the department of Physics and Astronomy at Vassar College.

Schwarz is recognized for her excellent work in bringing a modern, evidence-based pedagogy to the instruction of physics at Vassar College. She has been an advocate for science literacy, finding new and exciting ways to bring physics to undergraduate non-physicists as well as K-12 students. She has guided many physics majors to careers as professional educators and has been instrumental in achieving a balanced gender ratio in the Physics and Astronomy Department at Vassar College.

Schwarz has been a volunteer in many roles in the AAPT community including as the President elect and then President of the New York State Section of AAPT (2004 –2009) and as NY state section representative in 2010 –11.

Read the full press release at <http://www.aapt.org/aboutaapt/Cindy-Schwarz-2017-Halliday-Resnick-Award.cfm>.

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 ADOPTED HIGH SCHOOL PHYSICS 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.



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

J. Mark Schober, Trinity School, New York, NY
Sharing Your Expertise

The 2017 Paul Zitzewitz Excellence in Pre-College Physics Teaching Award was presented to J. Mark Schober, a high school physics teacher. at Trinity School in New York, NY. This award is in recognition of contributions to pre-college physics teaching and awardees are chosen for their extraordinary accomplishments in communicating the excitement of physics to their students.

Schober began teaching at John Burroughs School in St. Louis where colleagues and mentors from the St. Louis Area Physics Teachers (SLAPT), the Modeling Instruction program, the National Science Teachers Association, and AAPT, inspired his classroom practice and prepared him to lead teacher workshops for each of these organizations. Serving as the webmaster for SLAPT, he also helped to formalize SLAPT's structure to become an AAPT Section. He worked with SLAPT and Six Flags St. Louis to edit and write curriculum and plan logistics for Physics Day.

In addition to this presentation of the Paul W. Zitzewitz Award for Excellence in K-12 Teaching, Schober's teaching has been recognized with the Presidential Award for Excellence in Mathematics and Science Teaching (2007) and the Gene Fuchs Award from the St. Louis Area Physics Teachers (2009).

Read the full press release at <http://www.aapt.org/aboutaapt/Schober-2017-Zitzewitz-Award.cfm>.

2017 Awards and Grants (cont.)

KLOPSTEG MEMORIAL LECTURE AWARD

THE KLOPSTEG MEMORIAL LECTURE AWARD IS NAMED FOR PAUL E. KLOPSTEG, A PRINCIPAL FOUNDER, A FORMER AAPT PRESIDENT, AND A LONG-TIME MEMBER OF AAPT, AND RECOGNIZES OUTSTANDING COMMUNICATION OF THE EXCITEMENT OF CONTEMPORARY PHYSICS TO THE GENERAL PUBLIC. THE RECIPIENT DELIVERS THE KLOPSTEG LECTURE AT AN AAPT SUMMER MEETING ON A TOPIC OF CURRENT SIGNIFICANCE AND AT A LEVEL SUITABLE FOR A NON-SPECIALIST AUDIENCE AND RECEIVES A MONETARY AWARD, AN AWARD CERTIFICATE, AND TRAVEL EXPENSES TO THE MEETING.

John C. Brown, University of Glasgow, Scotland
Black Holes and White Rabbits



John C. Brown, University of Glasgow Scotland, School of Physics and Astronomy, is the 2017 recipient of the Klopsteg Memorial Lecture Award. This award recognizes educators who have made notable and creative contributions to the teaching of physics. Brown's successful career as a solar physicist has been marked by his success at communicating science. This ability to communicate has been recognized by the Queen of the UK appointing him in 1995 as 10th Astronomer Royal for Scotland and in 2016 as an OBE (Officer of the Most Excellent Order of the British Empire) "for services to the promotion of astronomy and science education."

Brown is unquestionably one the leading astrophysicists in the United Kingdom. He has greatly enhanced progress in the important field of high energy radiation associated with solar activity, so improving our understanding of the physics of our nearest star and of the Sun-Earth system with the sometimes dramatic effects the Sun can have on our home planet. He has also worked in many other areas of astrophysics including hot star mass loss, comet collisions with the sun and stars, solar-sailed spacecraft, and ill-posed data deconvolution problems. In all of these Brown is recognized worldwide for his pioneering contributions to science, for his deep insight into the underlying physics, and for his determination to uncover truth rather than 'taking sides' on issues.

In addition to his formal university teaching and research activities, Brown has made a lasting contribution to the quality of life in our society through his perennial and unwavering zeal for community outreach activities. Through his roles as an ambassador for astronomy and for science in general, Brown has greatly increased public awareness of the nature of scientific investigation and of the role of science in contemporary society.

Read the full press release at http://www.aapt.org/aboutaapt/pressreleases/2016_Klopsteg.cfm

ROBERT A. MILLIKAN MEDAL

Kenneth Heller, University of Minnesota, Minneapolis, MN
Can We Get There from Here?



The Robert A. Millikan Medal for 2017 was presented to Kenneth Heller for his pioneering and continued efforts to develop and refine physics education, in creative and innovative ways.

Heller is a pioneer in developing a systems approach to supporting the learning of physics through problem solving. This approach emphasizes the importance of the structure of problems, the structure and support of student groups, the preparation and support of teaching assistants, and the beliefs and values of faculty. Heller and his research and development group used a variety of methods to establish the research basis for the pedagogy known as Cooperative Group Problem Solving and made the technique adaptable by a wide variety of instructors and institutions.

The pedagogical systems and materials produced by his PER group are some of the most widely used research validated materials in U.S. colleges and universities. Although developed for introductory physics at the college level, this pedagogy has been influential in teaching advanced physics courses and in other STEM fields as well.

His service in support of physics education includes his role as AAPT President. He has also served on several other APS and National Academies committees related to education. For example, he was a member of the National Academies Committee on the Status, Contributions, and Future Directions of Discipline-Based Education Research. The report from this committee, released in 2012, has been highly influential in supporting the growing field(s) of Discipline-Based Education Research, of which Physics Education Research is an important part. All of these efforts are in service of improving teaching and learning of core science content.

Read the full press release at http://www.aapt.org/aboutaapt/2017-Millikan_Ken-Heller.cfm

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

2017 Awards and Grants (cont.)

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

HOMER L. DODGE CITATIONS FOR DISTINGUISHED SERVICE TO AAPT

Winter Meeting 2017



Ernest R. Behringer earned his BS in physics at the University of California at Santa Barbara, and his MS and PhD in physics at Cornell University. He is currently at Eastern Michigan University. Behringer has served as president of the Michigan Section of the AAPT, as the chair of the AAPT Area Committee on Physics in Undergraduate Education, on the AAPT Governance Committee, and as a reviewer and an Advisory Board member for the *American Journal of Physics*. He has also served as a board member of the AAPT-affiliated Advanced Laboratory Physics Association (ALPhA), as well as on the organizing committees of the 2012 and 2015 topical (“BFY”) conferences. He currently serves as the chair of the AAPT Undergraduate Curriculum Task Force.



Richard Gelderman earned his BS in physics at Virginia Polytechnic Institute & State University, and MA and PhD in Astronomy at University of Virginia. Gelderman currently holds the position of Professor of Physics and Astronomy at Western Kentucky University where he is also the director of the Hardin Planetarium. Gelderman has been instrumental in increasing the vitality, scope, and effectiveness of the Space Science and Astronomy Committee. Gelderman has also contributed to many other committees and activities in his many years of service to AAPT. In particular, he has served on the Membership and Benefits Committee, the Nominating Committee, and is currently the chair for the Science Education for the Public Committee as well as a member of both the Programs and Meetings Committee.



Sharon Kirby earned her BA in chemistry at Western Carolina University, a Master’s in secondary science education at the University of West Georgia, and a Specialist Degree in Curriculum and Instruction at Piedmont College. Kirby most recently was an instructor in the Department of Physics at the University of West Georgia. Kirby has a distinguished record of teaching and learning at the high school level and more recently at the university level with courses for education majors. A Physics Teacher Resource Agent (PTRA) since 2000, she has assisted in leading many PTRA workshops for teachers in the University of Georgia system. She has presented workshops and papers about the PTRA professional development at many state, regional, and national meetings, including national AAPT meetings.



Kenneth S. Krane earned his BS in physics at the University of Arizona, and his MS and PhD in physics at Purdue University. Krane is currently Emeritus Professor of Physics at Oregon State University. Krane has served AAPT for many years and in many ways. He has been a member of the *American Journal of Physics* (AJP) Editorial Board as well as an AJP Associate Editor, a member of the Committee on Physics in Graduate Education (1994-1997), a member of the Nominating Committee (2006), and a Principal Investigator, Director, and founder of the AAPT New Faculty Workshop from 1995-2006. He is also the 2004 recipient of the Robert A. Millikan Medal, a 2014 AAPT Fellow, and a co-leader of the Strategic Programs for Innovations in Undergraduate Physics (SPIN-UP) project, providing guidelines and recommendations to physics departments that led to more than doubling of the number of bachelor’s degrees awarded in physics over the past 15 years.



Ann M. Robinson earned her BS in biology at Appalachian State University, a MA in science education at Atlanta University, and completed the Education Specialist program at University of West Georgia. She is currently a part-time instructor in the Physics Department at the University of West Georgia. Robinson has a distinguished record of teaching and learning at the high school level and more recently at the university level with courses for education majors. A Physics Teacher Resource Agent (PTRA) since 1999, she has been an instructor for many PTRA summer workshops for science teachers in several different states, but especially, at the University of West Georgia. She has helped to write proposals to fund PTRA professional development and has presented papers about PTRA professional development at many state, regional, and national meetings, including national AAPT meetings. Robinson has served the association as a member of the Southern Atlantic Coast Section and as the Vice Chair of the Committee on Physics in Pre-High School Education.

2017 Awards and Grants (cont.)

HOMER L. DODGE CITATIONS FOR DISTINGUISHED SERVICE TO AAPT

Summer Meeting 2017

Duane Merrell is Associate Teaching Professor, Department of Physics and Astronomy, Brigham Young University, Provo, Utah. In 2004 he accepted a position at Brigham Young University. The physics teacher preparation program that Merrell has created there has been very successful in increasing the number of new physics teachers produced each year since 2006. a member of AAPT since 1989, he has served AAPT on the Committee on Laboratories, Committee on Apparatus, Committee on Teacher Preparation, Lotze Scholarship Committee, Committee on Physics in High Schools, Special Projects and Philanthropy Committee. Merrell is a long-time active member of the Idaho-Utah Section of AAPT, serving in the presidential chain from 2007-11. Recognition for his excellence in physics teaching has been recognized with the Physical Science Teacher of the year for Utah (1995), Emery School District Teacher of the Year (1991) Governor's Medal for Science and Technology (1998), Outstanding Physics Teacher for the state of Utah (2000). Merrell is also the recipient of the U.S. Presidential Award for Science Teachers (1994).



Joseph Kozminski began his teaching career as a Teaching Assistant and Research Assistant at Michigan State University. In 2005 he served as Adjunct Professor at Triton College. He joined the faculty of Lewis University later that year and has continued to teach and lead the Physics Department. Kozminski has performed extraordinary service to AAPT in a variety of positions including serving as a reviewer for *American Journal of Physics*, and being a member of the Executive Committee of the Undergraduate Curriculum Task Force, the Committee on Professional Concerns, the Committee on Physics in Undergraduate Education, Meetings Committee, and the Committee on Laboratories. He served as Chair of the Lab Goals Subcommittee and took the lead in writing the "AAPT Recommendations for the Undergraduate Physics Laboratory Curriculum," endorsed by the AAPT Board on November 10, 2014. A Life Member of AAPT, Kozminski has also provided leadership on a regional level. He has served as president of the Chicago Section of AAPT and as Section Representative.



Paul E. Stanley is Professor of Physics and holder of the Dobson Endowed Professorship in Physics at Beloit College, Beloit, Wisconsin. He began his work with the U.S. Physics Team in 2003 when he became a Coach. He became the team's Academic Director in 2009 and has continued serving in that role. He has been very successful in developing the tests used to identify the top U.S. high school physics students, and in training them to compete in the international physics competition. One measure of his success is the number of medals and special awards that U.S. Physics Team members have earned during International Physics Olympiad; 22 gold, 16 silver, 2 bronze medals and two special awards for achievement over the years that Stanley has lead the Team. His experience and temperament is invaluable especially traveling with five high school students to the International Physics Olympiad. The Olympiad is a nine-day international competition among pre-university students from more than 80 nations. At the International Physics Olympiad, the competitors are asked to solve challenging theoretical and experimental physics problems.



Toni Sauncy, an active member of AAPT since 1997, has served on the AAPT Programs Committee, the Lotze Scholarship Committee, and the Committee on Physics in Undergraduate Education. She has been an active Texas Section AAPT member for her entire professional career, serving through the four year presidential chain. She has also served as the four-year college representative to the Executive Council of TS AAPT and as a co-host for two different joint spring meetings of the TS AAPT/TS APS/Zone 13 SPS. She was a professor in the Department of Physics at Angelo State University from 2000-2014, one of the schools featured as an "undergraduate program that works" in the SPIN-UP study. Sauncy has a history of proven leadership as demonstrated by her service on numerous collegiate and professional association committees, including those of APS, AAPT and SPS. This leadership has been recognized with her receipt of the Angelo State University President's Faculty Excellence in Leadership & Service Award (2010) and with an Outstanding Service Commendation from the Society of Physics Students National Council, American Center for Physics, College Park, Maryland.



William, (Bill) Reitz is a retired teacher from Hoover High School, North Canton, Ohio. He had previously taught in Scotland and Australia. An active member of the Ohio Section, Reitz received the section's Distinguished Service Award in 2009. He served as the Ohio Section President from 1998-2000 and 2012-2014 and as Section Representative from 2015-2017. He first became an AAPT PTRA in 1986 and has continued to serve the physics community in that role. Additionally, Reitz has served on the AAPT Committee on Physics in High School and has chaired the Committee on Physics in Pre-High School and the Committee on Science Education for the Public.





AAPT 2017 Fellows Award

The 2017 recipients of the AAPT Fellows Award were:

First Cohort:

- Jon Anderson, Centennial High School, Minneapolis, Minnesota
- Dolores Gende, North Broward Preparatory School, Coconut Creek, Florida
- Kenneth Heller, University of Minnesota, Minneapolis, Minnesota
- Ramon E. Lopez, University of Texas, Arlington, Texas
- Frank P. Noschese, John Jay High School, Cross River, New York
- Bob Powell, University of West Georgia, Carrollton, Georgia
- J. Mark Schober, Trinity School, New York City, New York
- Cindy Schwarz, Vassar College, Poughkeepsie, New York

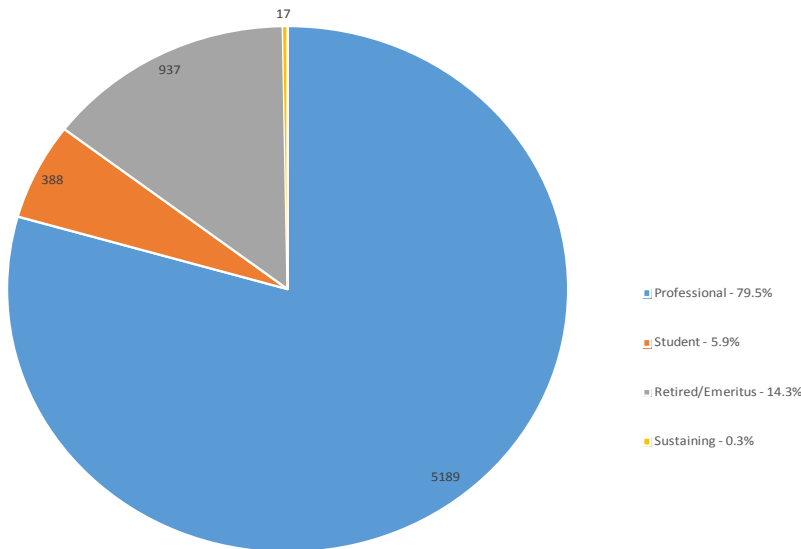
Second Cohort:

- Tim Duman, University of Indianapolis, Indianapolis, Indiana
- Laureen (Laurie) Reed, Saginaw Valley State University, University Center, Michigan
- Toni Sauncy, Texas Lutheran University, Seguin, Texas
- Steve Spicklemire, University of Indianapolis, Indianapolis, Indiana
- Tim Stelzer, University of Illinois, Urbana, Illinois
- Paul Tipler, Oakland University, Alameda, California
- Barbara Whitten, Colorado College, Colorado Springs, Colorado

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, 2017)

MEMBERSHIP BY MEMBER TYPE



Professional	5,189
Student	388
Retired/Emeritus	937
Sustaining	17
Total	6,531

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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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AAPT Physics Education Funds

Contributions support the future of physics education and are an investment in the enhancement of physics teaching, from high school to far beyond the graduate level.

Membership Development Funds

- E. Leonard Jossem International Education Fund—Provides grants to individuals in support of international programs dealing with teaching and learning of physics.
- New Teacher Fund—Support outreach and provide reduced membership fees for first and second year physics teachers.
- Student Fund—Support reduced membership fees for physics students and outstanding teaching assistants.

Program Funds

- AAPT Annual Fund—Support ongoing outreach and development programs
- Betty Preece SEES Memorial Fund—The SEES program provides 100 minority, low-socioeconomic students with the opportunity to engage in three hours of hands-on science activities. AAPT provides lunch, career and science materials
- ComPADRE Continuation Fund—Sustain and continue the operation of the ComPADRE website
- Memorial Fund—zDiscretionary fund resulting from donations given in memory of members who are deceased. Funds are used to honor deceased members and help preserve and share their interest(s) in physics education with the greater physics community.
- Physics Olympiad Fund—Promote academic excellence by helping U.S. students prepare for and participate in the International Physics Olympiad, providing a meaningful scientific and cultural experience for team members.
- PTRA Continuation Fund—Continue the work of the PTRA program.
- Undergraduate Curriculum Task Force Fund—Provides data on the current status of undergraduate physics and guidelines for enhancing undergraduate physics programs.

Excellence in Physics Education Award Funds

- AAPT-ALPhA Award—The AAPT-ALPhA Award will be given to a student (or group of students) majoring in physics, who has built, and possibly developed, an advanced laboratory experiment that becomes part of their school's advanced laboratory program
- John David Jackson Excellence in Graduate Education Award recognizes physicists and physics educators who, like Jackson, have made outstanding contributions to curriculum development, mentorship, or classroom teaching in graduate physics education
- Melba Newell Phillips Award Endowment—Restricted fund to endow the award that is presented to an AAPT leader whose creative leadership and dedicated service have resulted in exceptional contributions within AAPT.
- Oersted, Phillips, Millikan, Klopsteg, and Richtmyer Endowments fund the awards for AAPT's recognition of contributions to physics education.



AAPT 2017 Section Representatives

Local sections increase the impact of AAPT programs and resources.

AAPT Sections spread from Alaska and Canada to Mexico. 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.

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FLORIDA SECTION Ann J. Cox	MISSOURI SECTION Daniel B. Marsh	QUEBEC SECTION Jesus Vazquez-Abad	WISCONSIN SECTION A. James Mallmann
HAWAII SECTION No representative	MONTANA SECTION Rich McFate	SOUTH DAKOTA SECTION Judy Vondruska	

THE AMERICAN ASSOCIATION OF PHYSICS TEACHERS, INC.

Statement of Financial Position As of December 31, 2017 (With comparative totals for 2016)

	DECEMBER 2017	DECEMBER 2016
ASSETS		
CURRENT ASSETS		
Cash and Cash Equivalents	\$1,694,145	\$1,791,437
Investments	885,926	855,196
Accounts Receivable, net of allowance for doubtful accounts of \$47,585	90,443	153,953
Grants receivable	1,004,201	730,132
Inventory	76,462	9,713
Prepaid expenses	113,409	57,437
Total current assets	<u>\$3,864,586</u>	<u>\$3,597,868</u>
FIXED ASSETS		
Equipment	\$136,541	\$115,365
Capital lease	15,000	15,000
Software	116,815	106,736
	268,356	237,101
Less: Accumulated depreciation and amortization	(193,504)	(156,562)
Net fixed assets	<u>74,852</u>	<u>80,539</u>
OTHER ASSETS		
Investments, net of current portion	5,672,087	4,930,280
Investment in ACP	976,738	1,018,479
Total other assets	6,648,825	5,948,759
TOTAL ASSETS	<u>\$10,588,263</u>	<u>\$9,627,166</u>
	DECEMBER 2017	DECEMBER 2016
LIABILITIES AND NET ASSETS		
CURRENT LIABILITIES		
Capital lease obligation, current position	\$3,478	\$3,191
Accounts payable and accrued liabilities	264,481	\$318,769
Accrued payroll and related liabilities	153,262	134,492
Unearned Revenue	2,356,054	2,133,870
Refundable advance	112,908	-
Total current liabilities	<u>2,890,183</u>	<u>2,590,322</u>
LONG-TERM LIABILITIES		
Capital lease obligation, net of current portion	575	4,053
Accrued postretirement benefit obligation	1,336,919	347,725
Total long-term liabilities	<u>360,494</u>	<u>351,778</u>
Total liabilities	<u>3,250,677</u>	<u>2,942,100</u>
NET ASSETS		
Unrestricted		
Undesignated	4,778,236	4,400,831
Board designated	1,336,265	1,210,400
Total unrestricted	<u>6,114,501</u>	<u>5,611,231</u>
Temporarily Restricted	734,850	585,600
Permanently Restricted	488,235	488,235
Total Net Assets	<u>7,337,586</u>	<u>6,685,066</u>
TOTAL LIABILITIES & NET ASSETS	<u>\$10,588,263</u>	<u>\$9,627,166</u>

Statement of Activities and Change in Net Assets for the Year Ended December 31, 2017 (With Comparative Totals for 2016)

	UNRESTRICTED	TEMPORARILY RESTRICTED	PERMANENTLY RESTRICTED	2017 TOTAL	2016 TOTAL
REVENUE & SUPPORT					
American Journal of Physics	\$1,618,644	-	-	\$1,618,644	\$1,656,290
The Physics Teacher	963,679	-	-	963,679	946,405
Membership	821,605	-	-	821,605	860,467
Meetings, workshops and projects	727,739	-	-	727,739	925,982
Grants	1,430,310	-	-	1,430,310	763,271
Investment Income (Loss)	620,873	184,662	-	805,535	448,204
Other Publications	56,586	-	-	56,586	157,984
International Physics Olympiad	138,705	-	-	138,705	130,107
Loss (Earnings) of investment in ACP	(41,723)	-	-	(41,723)	495,283
Contributions	60,292	298	-	60,590	55,635
Miscellaneous Income	4,793	-	-	4,793	9,570
Net assets released from restrictions	35,710	(35,710)	-	-	-
TOTAL REVENUE AND SUPPORT	<u>6,437,213</u>	<u>149,250</u>	<u>-</u>	<u>6,586,463</u>	<u>6,449,198</u>
EXPENSES					
Program Services:					
American Journal of Physics	591,133	-	-	591,133	640,538
The Physics Teacher	766,149	-	-	766,149	755,689
Memberships	695,376	-	-	695,376	934,991
Meetings, workshops and projects	1,180,310	-	-	1,180,310	1,281,455
Grants	1,430,302	-	-	1,430,302	807,443
Other Publications	750,895	-	-	750,895	439,766
Total program services	<u>5,414,165</u>	<u>-</u>	<u>-</u>	<u>5,414,165</u>	<u>4,859,882</u>
Supporting services:					
General and administrative	490,952	-	-	490,952	335,421
Fundraising	595	-	-	595	1,013
Total supporting services	<u>491,547</u>	<u>-</u>	<u>-</u>	<u>491,547</u>	<u>336,434</u>
Total Expenses	<u>5,905,712</u>	<u>-</u>	<u>-</u>	<u>5,905,712</u>	<u>5,196,316</u>
Change in net assets before phter item	531,501	149,250	-	680,751	1,252,882
OTHER ITEM					
Change in post-retirement plan obligation	(28,231)	-	-	(28,231)	(26,516)
Change in net assets	503,270	149,250	-	652,520	1,226,366
Net assets at beginning of year	5,611,231	585,600	488,235	6,685,066	5,458,700
Net asset at End of year	<u>\$6,114,501</u>	<u>\$734,850</u>	<u>\$488,235</u>	<u>\$7,337,586</u>	<u>\$6,685,066</u>

2017 In Memoriam

AAPT Member and Physics Community Obituaries

*Remember someone special by giving a gift in their memory.
Donate to the Memorial Fund at aapt.org/Membership/memoriam.cfm.*

Anthony P. French

FEBRUARY 3, 2017

Former AAPT President, Oersted Medalist, and renowned physics educator, Professor Anthony (Tony) P. French, died on 3 February, 2017 in his 97th year. His physics career included work at Los Alamos, NM as a young member of the British mission to the Manhattan Project, a faculty appointment at Cambridge University, emigration to the US, and a long and fruitful career at MIT.

French was born in 1920 in Brighton, England. He completed his early education there and entered Sidney Sussex College of Cambridge University in 1939 just as World War II was beginning. In 1944, two years after finishing his undergraduate work in physics, he was sent to Los Alamos where he investigated nuclear reactions relevant to Edward Teller's vision of a possible "super" bomb. After the war, he obtained his Ph.D. in nuclear physics at Cambridge in 1948.

He continued as Demonstrator and Lecturer in Physics at Cambridge until he emigrated to the US in 1955 and joined the physics department at the University of South Carolina. From 1948 to 1958, he authored or co-authored 18 papers dealing with various topics in nuclear physics. He also wrote a textbook *Principles of Modern Physics* that brought him to the attention of MIT's Jerrold Zacharias.

Zacharias was the initiator of the Physical Sciences Study Committee that produced the now famous PSSC Physics text and workshops that reshaped American high-school physics teaching in the early 1960s. He recruited French to help to extend the PSSC strategies to university-level physics. French redirected his primary concern to physics education and moved to MIT in 1962.

Zacharias' plan did not work out. Instead Tony French became the lead professor teaching and managing the large physics course required of all MIT students. This work motivated him to write his four much admired books *Special Relativity*, *Newtonian Mechanics*, *Vibrations and Waves*, and *Introduction to Quantum Physics* (with Edwin F. Taylor).

French valued clarity and careful reasoning, and he wrote with a simple direct style to achieve these values. You can see this both in his textbooks and in his writings on the intellectual history of physics and physicists. He was proud of his work as editor of a centenary volume about Einstein in 1979, and as co-editor, with Peter J. Kennedy, of a companion 1985 volume about Niels Bohr. He also applied his sharp intelligence and tact when, in 1993, he led the committee that designed the problems for the XXIV Physics Olympiad.

His work in physics education has received recognition from various directions. In 1976 he received a Distinguished Service Citation from AAPT. In 1980, he was awarded the University Medal of the Charles University, Prague, for contributions to physics education, and in 1988, the Bragg Medal and Prize of the Institute of Physics (London) for contributions to the teaching of physics. In 1989, AAPT awarded him the Hans Christian Oersted Medal in recognition of his notable contributions to the teaching of physics. In 1993, AAPT awarded him the Melba Newell Phillips Medal for creative leadership and dedicated service that resulted in exceptional contributions to AAPT.

Mildred S. Dresselhaus

FEBRUARY 20, 2017

Mildred Dresselhaus, an Institute Professor of Physics and Electrical Engineering at MIT died on February 20, 2017. She began her studies of physics at Hunter College in New York City and Cambridge University in England, and received her Masters Degree at Radcliffe College and her Ph.D. at the University of Chicago. She then spent two years at Cornell before moving to MIT Lincoln Laboratories and then becoming a professor at MIT.

Her career reflected her multiple interests and abilities. She conducted important research in such areas as superconductivity, magneto-optics, thermoelectrics, and carbon nanotubes. She was a leader the field of physics education serving as president of the American Physical Society (APS) and of the American Association for the Advancement of Science (AAAS), chair of the governing board of the American Institute for Physics (AIP), Director of the Office of Science of the Department of Energy (DOE), as co-chair of the recent Decadal Study of Condensed Matter and Materials Physics; and as treasurer of the National Academy of Sciences.

As an educator she was a teacher and mentor to numerous MIT undergraduates and graduate students. Throughout her career she has worked to increase the participation of women in physics and engineering and is one of the pioneering leaders in this effort. In 1973 she wrote a grant proposal to the Carnegie Foundation to encourage women's study of traditionally male dominated fields, such as physics. Although her work in this field of physics education has resulted in progress, this is still an unsolved problem and an active area of physics education research.

In addition to her Presidential Medal of Freedom (2014) — the highest award bestowed by the U.S. government upon American civilians — and her National Medal of Science (1990), given to the nation's top scientists, Dresselhaus's extensive honors included the Hans Christian Oersted Medal, presented by AAPT in 2008, the IEEE Medal of Honor for "leadership and contributions across many fields of science and engineering," the Enrico Fermi Award from the U.S. Department of Energy for her leadership in condensed matter physics, in energy and science policy, in service to the scientific community, and in mentoring women in the sciences; and the prestigious Kavli Prize for her pioneering contributions to the study of phonons, electron-phonon interactions, and thermal transport in nanostructures. She was also an elected member of the National Academy of Sciences and the National Academy of Engineering.

Robert F. Tinker

JUNE 21, 2017

Robert ("Bob") F. Tinker, a long-time AAPT member, energetic science educator, and educational entrepreneur, passed away on June 21, 2017. Bob was born December 1, 1941 in Wilmington, DE. After graduating with high honors and double majors in physics and chemistry from Swarthmore, Bob earned a master's degree in physics from Stanford, but interrupted his graduate education to teach from 1962 to 1964 at Stillman College in Tuscaloosa, Alabama. He then went to MIT where he received his Ph.D. in physics, working under John G. King. Later, while teaching at Amherst

2017 In Memoriam Continued

College, Bob started freelance work with the Technical Education Research Centers in Cambridge, MA. He became Director of the Technology Center and later Chief Science Officer for TERC, where he oversaw growth from six staff members to over 100 full-time employees and expansion of TERC's efforts from higher education into K-12 education. In the 1970s and 80s Bob became the "patriarch of probeware" with his innovative use of sensors and the newly arrived personal computers. Bob founded the Concord Consortium in 1994 to work on applications of technology for web-based courses, the Virtual High School, and other science teaching innovations. He served as its dynamic and passionate president until 2009.

His long-time colleague at the Concord Consortium, Paul Horwitz, recalled his first encounter with Bob. "January, 1980, somewhere just off Harvard Square. Bob is surrounded by what are called at the time "micro-computers" to distinguish them from refrigerator-size "minicomputers" and room-size "mainframes." Apples, Sinclairs, and TRS (affectionately, "Trash") 80s. And children – hordes of them, boys and girls – gathered after school to play with these strange but oddly seductive machines. Pong and Space Invaders yes, but some of them are graphing temperature, running a simulated lemonade stand, trekking out West in a covered wagon, or typing "fd 10 rt 90..." and watching a mechanical turtle obey. Their faces speak volumes; some of them will have to be chased home or they will miss dinner."

Another colleague, Norman Chonacky, writes "When I first met Bob in the 1970's, he was holed up in the basement of TERC's then headquarters surrounded by circuit boards and his faithful band of young protégés – 'Tinker's TERCkeys.' His grammar was electronics but his language was information technology. That is the way I best remember him. He delighted in engaging and working with other people. He clearly understood the value of scientific and educational communities. He consistently chose to collaborate with others, inventing instruments and educational applications that were educationally transformative and whose echoes can still be heard. His career spanned an era of technology emergence, science educational development, and social change that was staggering for those of us who grew up personally in the '50s and professionally in the '60s. Bob embodied all three. He went to the MIT for technology, to the Commission on College Physics for education, and to the South for civil rights."

As the Concord Consortium wrote in its email notice about Bob's passing, "Bob's brilliant mind and genuine compassion were remarkable qualities that rarely come in the same person. Bob combined them in singular and inspiring fashion. He continued to serve on our board of directors until his death, sharing his vision for an educational revolution that would make science accessible to all students."

Vernon Ehlers

AUGUST 15, 2017

Vernon Ehlers, who represented west Michigan in Congress, died August 15, 2017 at age 83. He served in Congress for 17 years until 2011.

Vern, who held a Ph.D. in nuclear physics, was known for promoting scientific research and efforts to improve math and science education. In 2006, during an interview to celebrate the 75th anniversary of the founding of AAPT, he committed, "My physics education gave me an incredible understanding of our universe, allowing me to understand the interactions between so many things. Also, the analytical training and practice I

received during my physics education has been invaluable in my political career."

Commentary by people who knew and worked with Vern showed a common theme, his love of science and teaching.

Jack Hehn commented, "I learned several lessons working with Vern Ehlers on science and education policy issues in the U S House of Representatives. It was, and is, very important to have scientists in public service and particularly as legislators. Vern believed in working across of the aisle and often encouraged individuals to listen carefully to what an opposing representative had to say. He also urged patience and working toward long-term goals. He introduced several pieces of legislation year after year with the understanding and hope that conditions and opinions of the House would change in favor of his position with time. Vern would always take time to talk with students and to encourage their interest in science and education even when he was very busy with legislative issues. Several friends would point out that 'Vern was always a teacher at heart.'"

Warren Hein responded to Vern's passing by saying, "Dr. Vern Ehlers was a true friend of AAPT and an advocate for science and science education. He was respected by all his congressional colleagues and formed a bi-partisan collaboration with Rush Holt, the other physicist in congress, to promote agreement on issues important to scientists of all disciplines. Ehlers would always take time to meet with the 20-24 students participating in the annual Physics Olympiad Training Camp and, with Holt, helped arrange meeting for these students with their congressional representatives. At these meeting with the IPHO students Ehlers would always encourage them to consider public service at some point during their career because "physicists know how to solve problems." At one of these meetings with IPHO students Dr. Ehlers received an honorary membership in AAPT."

Bernie Khoury said, "It took only about a minute after meeting Vern Ehlers to know that he was a born teacher.okay, maybe he learned the skill, but it was a skill manifested clearly in his demeanor. His was a steady and calming voice. He gesticulated with slow deliberate movements. He listened intently to assure that he understood what you were saying or asking. His response was always reasonable and well targeted. Even if he were not trained as a physicist, Ehlers would have been a good friend of science and of education. Being trained in physics gave him some of the gravitas that strengthened his public policy comments about the value of science and education and research to national welfare. Vern Ehlers' career was the embodiment of the prototype citizen-scientist. He was a scientist and teacher who volunteered to provide science advice to his local congressman, Gerald Ford, who just happened several decades later to become the U.S. President. If more scientists and teachers followed the Ehlers' model of reaching out in some constructive way to influence public policy, then our nation would benefit from such efforts, just as the nation was the beneficiary of the efforts of Vern Ehlers: the scientist, who became a teacher, who became an adviser, who became a Congressman."

2017 In Memoriam Continued

Paul Doherty

AUGUST 17, 2017

Dr. Paul Doherty, physicist and senior scientist at the Exploratorium Museum of Science, Art and Human Perception in San Francisco, died peacefully of cancer on August 17th, 2017 at the age of 69. With a deep command of physics, skill in teaching and communicating science, and a generous and enthusiastic spirit, Paul inspired people around the world and was beloved by many. He leaves behind a lasting mark on the Exploratorium, one of the premiere science museums in the world, where he devoted the last 31 years of his life.

Paul was a native of Boston, and graduated summa cum laude from the Massachusetts Institute of Technology (MIT) in 1970, earning his PhD from MIT in solid-state physics in 1974. He joined the physics faculty of Oakland University in Michigan in 1974, where he taught a wide range of science courses. He left his tenured position at Oakland University to join the Exploratorium in 1986. At the Exploratorium, Paul became co-director of the Teacher Institute in 1990, the founding director of the Center for Teaching and Learning in 1992, and senior staff scientist in 1997. He repeatedly said it was “the best job in the world.”

Paul was unusually knowledgeable about physics and how it relates to observable phenomena, and used this knowledge and his enthusiasm for teaching to fulfill diverse roles at the Exploratorium. His primary activity was development of simple hands-on activities for middle- and high- school science classrooms prompting students to “notice” and interpret what they see. He taught hundreds of workshops for teachers, including intensive Summer Institutes, using such inquiry techniques; there are few science teachers in the Bay Area who have not been touched by Paul’s mentorship. “He loved teachers,” recalled his former co-director, Linda Shore, describing how he helped deepen many teachers’ understanding of physics: “He would stick with you until you got it.” He also performed public webcasts (often from far-flung locations), advised exhibit developers, collaborated with the museum’s artists and writers, created a virtual Exploratorium (the “Splo”) in the online world Second Life, appeared on Late Night with David Letterman, and taught science to Buddhist monks through Science for Monks. Paul received the Faraday Science Communicator award from the NSTA. His approach to education is nicely summarized in the dedication of his most recent book to his professor Paul Tipler, who (explained Paul) “showed me how to inspire students to learn science by making it interesting, relevant, fun, and correct.”

Paul was a prolific author, publishing a wide range of books including Explorabook, The Exploratorium Science Snackbook, the Klutz Book of Magnetic Magic, the Zap book, Glove Compartment Science, Color of Nature, and Traces of Time, and he was a regular columnist for the Magazine of Fantasy and Science Fiction, and a contributor to many other publications. Paul’s artistic outlet was playing the “whirly” – a corrugated plastic tube which, when swung overhead, will generate notes in harmonics of one-half of the tube length. Paul won “Best Science Demonstrator” at the World Congress of Museums in Helsinki in 1996 playing the whirly.

Paul was also a world-class outdoor adventurer, with a lifelong love of rock climbing and mountaineering. He climbed the face of El Capitan as well as making the first ascent of a 20,000-foot peak in the Sierra Nevada de Lagunas Bravas in the Andes. Over his years of climbing, he cumulatively completed more than 2 “vertical marathons.”

Paul’s death was a surprise to his friends and family, as his cancer had been previously declared in remission. Paul is survived by his wife of over 40 years, Ellen Henson. A celebration of his life at the Exploratorium on October 6th was titled “A life well-lived” and featured many of Paul’s favorite hands-on activities, and Amazing Grace performed on whirly.

John Layman

DECEMBER 30, 2017

John Layman was born August 22, 1933. He was a congenial colleague and a good friend to thousands of educators, students and neighbors. He was an exemplary physics teacher, and a well-respected mentor, faculty member and community leader throughout his long career.

Graduating from Park College, John began his career as a high school physics teacher in the Kansas City schools. Upon completing his doctorate at Oklahoma State University, he joined the faculty of the University of Maryland (UMD) with appointments in Physics and Education. He believed every student could learn science through inquiry, experience, and engagement. He was an early proponent of Physics Education Research (PER) and an early developer of digital educational and laboratory technologies. His undergraduate and graduate students held him in high esteem, particularly future teachers.

John dedicated many years of his life to the American Association of Physics Teachers (AAPT), serving as President, Secretary, and Historian and was often a daily volunteer in the Executive Office. He was recognized with the Homer L. Dodge Citation for Distinguished Service to AAPT in 1978 and with an AAPT Fellow award in 2014. He took great pride in receiving the Melba Phillips Award (1998). He was an active volunteer leader with the American Institute of Physics (AIP) for more than 25 years. John also served as a principal or co-principal investigator on numerous NSF and other federal and state large-scale grants and program awards. He served in senior advisory capacity positions with many agencies, institutions, and associations.

An active patron in the arts and entertainment community, he was a major sponsor of music competitions at UMD in honor of his mother and his wife. He provided substantial financial support for plays and playwrights at Arena Stage in Washington DC. He was a life-long aficionado of opera, and classical music was always playing in his home.

John enjoyed travel and worked with colleagues on six continents often enjoying special and long remembered gastronomic and entertainment events with them. He was pleased to live in the DC area and routinely took advantage of numerous Smithsonian and other programs along the national mall. He enjoyed Sunday drives ranging widely through the local region. He loved to engage children in his neighborhood and built a Grandfather’s Science Box for them as an example product for STEM outreach.

John Layman was a well-rounded gentleman and a positive influence on many lives.

