

AMERICAN PHYSICAL SOCIETY

Advancing Physics



THE AMERICAN PHYSICAL SOCIETY STRIVES TO

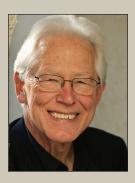
Be the leading voice for physics and an authoritative source of physics information for the advancement of physics and the benefit of humanity

Collaborate with national scientific societies for the advancement of science, science education, and the science community

Cooperate with international physics societies to promote physics, to support physicists worldwide, and to foster international collaboration

Have an active, engaged, and diverse membership, and support the activities of its units and members





t is not an exaggeration to say that 2014 was an historic year for APS. For the first time in 100 years, the Society carried out a major reform of its governance and executive structure. The reforms are intended to strengthen APS to meet the challenges facing the Society in the increasingly complex and rapidly evolving world in which we live. The changes also bring us into conformity with the statutes governing nonprofit corporations in Washington DC, where we continue to be incorporated. After a process that gave voice to all elements of our Society from the Executive Board to the Council to the Units and of course to the members, the reforms were approved by an overwhelming positive vote of the membership.

This year the Society received the largest single gift in its history from Jay and Mary Jayne Jones of Seattle, Washington. It will be used to endow a new prize, The APS Medal for Exceptional Achievement in Research. This \$50,000 prize will be the highest honor bestowed by the Society. Jay Jones is a person of remarkable personal character, with a love of physics and a deep appreciation for what physics research contributes to society.

There have also been some changes in the top executive leadership of the Society. In August, Treasurer/Publisher Joe Serene stepped down and returned to teaching at Georgetown University. In December, Kate Kirby was voted by the new Board of Directors to become the first APS Chief Executive Officer, a new office created as the result of our corporate reform initiative.

Implementation of the APS Strategic Plan continued this year. Under the leadership of the APS Industrial Fellow Steven Lambert, APS is exploring how to better meet the needs and interests of industrial physicists. With the strong participation of the APS Forum on Industrial and Applied Physics (FIAP), APS held a Workshop on National Issues in Industrial Physics to further define issues of importance to our industrial members, and a set of recommendations for the Society is being drafted.

In closing, let me say that it has been an honor and enormously satisfying to serve as the President of APS. It has been a year of significant change and accomplishment that I am unlikely to forget. I want to thank everyone who contributed to making this year so successful.

Sincerely yours,

Malcolm R Beasley 2014 President

Editorial Office

PRApplied's mission is to publish the highest quality papers at the intersection of physics and engineering that are of interest to a large group of physicists. Well on its way to achieving that goal, PRApplied has now published over 100 papers and has been accepted into the Web of Science. Also in February a new design for the journal websites was rolled out, optimized for display across mobile devices.

In summer 2014, the roles of *Physical Review X* (PRX) and *Physical Review Letters* (PRL) were more clearly defined. A PRX "visiting committee" recommended that PRX remain a small, selective journal, offering authors a high-visibility openaccess option for publishing key individual articles of longer length. As APS's flagship journal, PRL will continue to cover significant research across the full spectrum of physics, with broad dissemination and high visibility for shorter articles. Maintaining PRL's high submission standards by rigorously enforcing its acceptance criteria has been an ongoing and successful effort throughout 2014.



The last stage of the new Editorial Office building was completed, and by the end of the year, the editorial staff were well-established in their stylish and spacious new home. PHOTO: DAVID SUNBER

Scientific Meetings

ttendance was strong at the 2014 APS March and April meetings. The March Meeting, held in Denver, Colorado, drew 9,300 U.S. and international physicists and continued the pattern of growth in attendance over the last five years. More than 8,800 papers were presented in invited and contributed talks and in poster sessions. The total number of attendees included over 4,000 students and more than 2,500 international members. A program highlight was The Fred Kavli Special Symposium, "The Many Electron Problem—Where are We Now?".

The April Meeting was held in Savannah, Georgia. Over 1,300 physicists attended and presented approximately 1100 invited and contributed talks and also posters. This meeting also contained a Fred Kavli Special Symposium, "The Mysteries of Mass." In addition, there was also a special Town Hall Meeting, "Re-Imagining the April Meeting," to get feedback for the future of this meeting.

Throughout 2014 there were many other scientific meetings sponsored by APS units, including the divisions of Nuclear Physics, Atomic, Molecular and Optical Physics, Fluid Dynamics, and Plasma Physics, as well as a number of meetings sponsored by topical groups and sections. The Mid-Atlantic Section held its inaugural meeting.

Media Relations

PS journals, meetings, programs, and members are the leading sources of physics news worldwide. APS Media Relations strives to distribute Society news to major print, broadcast, and online media outlets through press releases, press conferences, webcasts, and online resources for journalists.



Public Affairs

n 2014, as in past years, the APS Office of Public Affairs (OPA) focused its activities on policy analysis and advocacy that reflected priorities set by its two advisory committees: the Panel on Public Affairs and the Physics Policy Committee. Following their guidance, OPA continued its focus on promoting federal support for research and education, facilitated an update of the APS Climate Statement, engaged on rules governing "Open 'Access" and "Open Data," advocated for easing of conference travel restrictions on federal and national laboratory employees, supported the National Science Foundation in its defense against House Sci-

ence, Space, and Technology Committee attacks, and developed a pilot program to improve availability of liquid helium for the research community. OPA exploited media strategies, grassroots lobbying, congressional testimony, and collaborations with science and technology partners in Washington.

In spite of extraordinarily low congressional productivity and severe budgetary strictures, APS and its science and technology partners were reasonably successful in their advocacy for federal science support. The OPA assisted more than 50 APS unit leaders in making Capitol Hill visits prior to the annual

leadership convocation and Public Affairs Director Michael Lubell continued as a bi-monthly contributor to Roll Call, a leading Capitol Hill newspaper.

Finally, in order to begin to address the shortage of science expertise in the U.S. Department of Education, OPA helped establish the APS/AIP STEM Education Policy Fellowship in the department's Office.



San Jose Mercury News

Particle physics: U.S. should not cede research leadership to other nations

By M.R. Beasley / Special to the Mercury News

A panel of eminent physicists recently issued a strong warning to policymakers: "Without the capability to host a large project, the U.S. would lose its position as a global leader in [high-energy physics] ..., and the international relationships that have been so productive would be fundamentally altered."

The Particle Physics Project Prioritization Panel (P5) underscored the point during a congressional hearing held on Capitol Hill earlier this month.

High-energy physics, or particle physics, at first blush is not the science of everyday life. Its primary objective is to probe the fundamental laws of nature and explore the mysteries of the universe. Its goal is not to produce new materials, advance medicine or enhance national security — but it has done those things and more.

For example, research in the field led to the World Wide Web, CT scanning and X-ray detection for explosives.

Esoteric high-energy physics discoveries also have captured the public's imagination and inspired the next generation of scientists. After more than a decade, a team of thousands of particle physicists + the largest contingent from the United States -- finally found the Higgs boson less than two years ago. That discovery, which had to the 2013 N is safed they.

APS members provided more than 7,200 signatures on letters to Congress as a result of OPA's grassroots efforts. Staff also aided APS members in writing and placing op-eds in newspapers throughout the U.S. (see the San Jose Mercury News above). PHOTO: TAWANDA W. JOHNSON

Public Outreach

PS Outreach had another big year in 2014. We continued our mission to promote science literacy and physics engagement to a diverse audience. The Spectra comic book series published its 6th issue, Spectra's Quantum Leap, which pits Spectra and her pals against the accidental creations of Ms. Pauli Black, aka the Quantum Mechanic. The new edition was as popular as ever at Comic-Con International in San Diego.

2014 also saw the third USA Science and Engineering Festival. APS Outreach led a collaboration with The Optical Society, the American Institute of Physics, the Society of Physics Students, and the American Association of Physics Teachers, to bring "Big Top Physics" to the eager attendees. Events included a bed of nails and a "Frozen" sing-a-long accompanied by a musical Tesla coil.

Hard at work, our 2014 Outreach Mini-Grant awardees have produced some innovative and exciting outreach programs. The APS outreach website, www.physicscentral.com, received over a million hits in 2014 and continues to be a leading source for engaging the public and disseminating physics information.



Tiny Batmen love the Spectra comic series at Comic-Con International, held every year in San Diego, California. With over 125,000 attendees daily, it is the largest comic book and science fiction convention in the world. PHOTO: CALLA COFIELD



The Outreach Mini-Grant awardee Guerilla Science created an Intergalactic Travel Bureau to help passersby plan vacations to such spots as the moon or Mars. Vacationers learned about the complexities of space travel and the challenges of inhabiting other planets and even sent postcards to loved ones from their fictional destinations. PHOTO: RYAN JOHNSON



The "Back Lever Physics" article on Physics Central.com was popular among both physicists and weight lifters. It used physics to explain the "back lever" strength training move. PHOTO: BRIAN JACOBSMEYER

Education and Diversity

PHYSICS TEACHER EDUCATION COALITION

In the U.S., fewer than half of all high school physics teachers have any significant background in physics. APS, working with the American Association of Physics Teachers, is addressing this need through the Physics Teacher Education

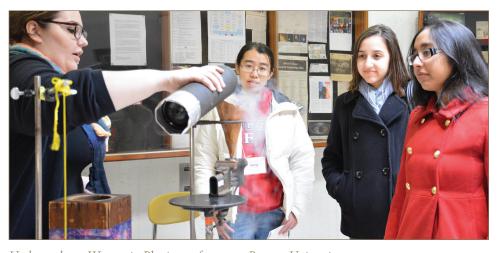


In 2014, the number of institutions in the PhysTEC coalition grew to more than 300, or more than one-third of all U.S. physics departments.

Coalition (PhysTEC), our flagship education program. Since 2001, PhysTEC has funded more than 40 institutions to build model teacher education programs, which have more than doubled their number of graduates who are well-prepared to teach physics. In 2014, the project published a report on sustainability, which found that nearly all studied sites were highly successful in sustaining their programs after project funding ended. PhysTEC is supported by the National Science Foundation and by APS members.

CONFERENCES FOR UNDERGRADUATE WOMEN IN PHYSICS

The APS Conferences for Undergraduate Women in Physics (www.aps.org/link/cuwip) bring together each year nearly 1,200 women at regional sites across the country. Now in its tenth year, these conferences provide undergraduate women with opportunities to gather information about graduate school and job opportunities in physics. The conferences are funded by the National Science Foundation and the U.S. Department of Energy. In a related effort, APS was awarded a five-year grant from the National Science Foundation in 2014 to continue to offer and expand its programs that provide communication and negotiation skills to women.



Undergraduate Women in Physics conference at Rutgers University. PHOTO: PETCHARAT CHAIYASETH

Education and Diversity

NEW EDUCATION AND DIVERSITY INITIATIVES

Generous contributions from APS members in 2014 funded 37 scholarships to undergraduate minority students. Going forward, these scholarships will be incorporated into the National Mentoring Community, a program to increase the number of underrepresented minority students who earn undergraduate physics degrees, which was approved unanimously in 2014 by the APS Committee on Minorities

and the APS Board and Council. The new program (www.NationalMentoringCommunity.org) will establish a network of committed mentors and provide these mentors and their mentees with resources, advice, and connections to help enable student success.

Also new was the ad hoc Committee on Lesbian, Gay, Bisexual, and Transgender Issues (C-LG-BT) that will advise APS on issues faced by LGBT physicists and provide recommendations for greater inclusion. The group plans a report in early 2016.





2014-2015 APS Minority Scholars Christopher Tiller, University of Central Florida, and Erin Flowers, Columbia University

APS BRIDGE PROGRAM

In 2014 the APS Bridge Program (www.APSBridgeProgram.org) placed 26 underrepresented minority students into graduate physics programs, none of whom would have gained admission without Bridge Program assistance. In its second year, the project has already welcomed two new funded sites and is launching a network

of physics graduate programs, where students receive individualized mentoring and assistance in making the transition into doctoral studies. The numbers of students placed into graduate programs for 2013 and 2014 already have far exceeded the project's stated goals.



Students enrolled in California State University, Long Beach through the APS Bridge Program ultimately plan to pursue doctoral degrees in physics. PHOTO: IRENE HOWARD

WOMAN PHYSICIST OF THE MONTH

Completing its third year, the APS Woman Physicist of the Month project featured a variety of female physicists from graduate students to program directors, both domestic and international. This project showcases female physicists who have had a positive impact on the field, with the aim of opening professional doors and opportunities for young women in physics.













Six of the 2014 Women Physicists of the Month: Susan Blessing, Ibtesam Saeed Badhrees, Shohini Ghose, Bethany Goldblum, Giuliana Di Martino, and Kathryne Sparks Woodle.

Membership

The official APS membership count at the close of 2014 was 51,523—another new record high. The early career membership category continued to show growth, in part because these members are now eligible for the reduced dues category for up to five years. The number of graduate and undergraduate student members both grew, and when combined made up 33% of the total membership.

As part of continuing efforts related to the 2013-2017 Strategic Plan, the APS "Local Links" program was developed in 2014 to promote networking, especially among industrial physicists and early career physicists in all fields. The program creates local groups of physicists from the private sector, government labs, and academia, so that they can share ideas and build relationships and collaborations. The APS Topical Group on Soft Matter was approved in April 2014, which brings the total number of APS units to 45. Overall, more than 63% of APS members belong to at least one unit.



PHYSICS CAREERS

APS expanded its career efforts by supporting a conference held at the American Center for Physics focusing on Physics Innovation and Entrepreneurship (PIE) education for physics undergraduates. The goal of the conference, attended by representatives from over 50 physics departments, was to highlight the elements of successful undergraduate physics programs that prepare students to be entrepreneurs. The APS Committee on Careers and Professional Development (CCPD) worked closely with the Division of Plasma Physics (DPP) to promote industrial careers at the 2014 DPP Meeting in New Orleans, in part by including several industrial representatives in a career panel sponsored by the DPP Committee on the Concerns of Junior Scientists. The 2014 APS DPP Job Fair had more than double the number of jobs posted compared to previous years.

APS staff continue to serve student and early career members through career workshops, graduate school fairs, APS webinars, and the downloadable Physics In-Sight slideshow for use in physics departments. Also APS has developed a new online Professional Guidebook, which highlights existing resources and provides guidance for career planning and advancement.

PRIZES, AWARDS, AND FELLOWSHIPS

The APS Medal for Exceptional Achievement in Research, which was established in 2014, will be the first Society-wide annual award to recognize achievement of researchers across all fields of physics. It is funded by a generous donation from Jay Jones, the founder and former president of Olympic Medical Corporation. The medal will be presented for the first time in 2016. Because of the broad scope of the prize, a special awards committee will be established by the APS Council to select the winner(s).

The following new awards were established in 2014: The APS Young Scientist Award, from the topical group on Quantum Information, to be presented for the first time in 2016; the Young Scientist Unit Award, from the Topical Group on Soft Matter Physics, to be presented for the first time in 2015; and lastly, a Mentorship Unit Award, from the Division of Particles and Fields (DPF), to be presented for the first time at the April Meeting in 2015.

In 2014, the Society elected 251 APS members, 37 of whom were female, to Fellowship. This is a distinct honor reserved for no more than 0.5% of members each year, recognizing exceptional contribution to the physics community.

International Affairs

hysics is international in nature, and 23% of APS members live outside of the United States. To serve our international members, as well as the international physics community, APS partnered with organizations worldwide in 2014 to offer exchanges, travel awards, and training programs to physicists around the globe.

In partnership with the Indo-U.S. Science and Technology Forum and the Sociedade Brasileira de Física, APS offered the Brazil and India Physics Student and Professor Exchange Programs.

Likewise, APS partnered with scientific societies in Europe and the United States to support the Synchrotron-light for Experimental Science and Applications in the Middle East travel award program that provides training opportunities for scientists in the Middle East.

APS continued to co-sponsor the Workshops on Entrepreneurship for Physicists and Engineers in Developing Countries. The Society also underscored its ongoing commitment to developing-country physicists through the APS International Travel Grant Award Program, which supports developing country scientists' travel to visit collaborators in developed countries.

Lastly, through its Committee on International Freedom of Scientists, APS advocated for the human rights of scientists around the world. APS also remains vigilant regarding important U.S. government policies that impact international scientific collaboration, and will continue to work with federal leaders to ensure that national security concerns do not unduly restrict such research.



U.S. science students visit the SESAME facility in Allan, Jordan. PHOTO: MARVIN MARSHAK

Finances

DECEMBER 31, 2014

During the fiscal year 2014, the total assets of the American Physical Society increased from \$168.0M to \$173.7M, while the Society's liabilities increased to \$35.0M from \$34.5M the previous year.

he tables and charts in this section summarize the financial operations of the Society as of December 31, 2014. The table headed Statement of Financial Position shows the final financial position of the Society for 2014 and 2013. The table headed Statement of Activities shows the financial activities of the various components of the Society for the 2014 and 2013 fiscal years. The distribution of operating revenues and expenses across the components of the Society is also displayed graphically in the accompanying figures.

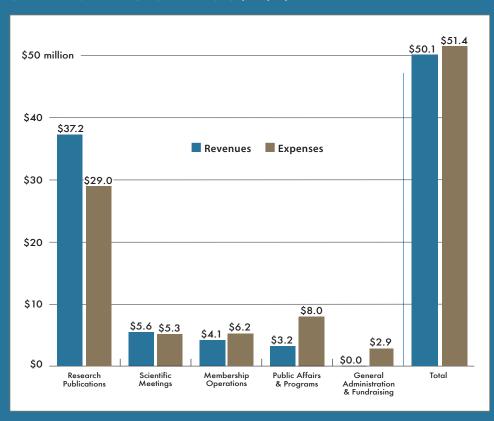
Net assets at the end of fiscal year 2014 were \$138.7M, compared with \$133.5M at the end of 2013. These include \$14.1M in restricted net assets, which are funds for prizes and awards and for the programs of the current capital campaign. The restricted net assets increased from \$12.7M at the end of 2013. The unrestricted net assets include the Society's operating accounts (cash and cash equivalents), totaling \$12.5M at the end of 2014, and its investments in equities and fixed-income issues. These investments were \$134.7M at 12/31/14 and \$132.6M at 12/31/13.

Business Continuity Plans (BCPs) are in place for the College Park, Washington D.C., and Ridge offices. The BCPs provide action plans in the event of a disruption of normal operations by natural or manmade events. The BCPs include contact names, checklists of orderly procedures, and plans for off-site operations if necessary. The BCPs are updated annually and a report on their status is made to the Audit Committee.

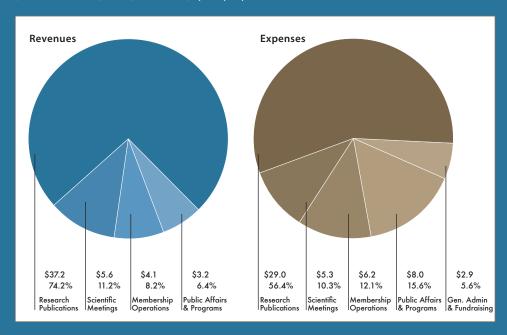
Finances

DECEMBER 31, 2014

OPERATING REVENUE & EXPENSES (IN \$M)



STATEMENT OF ACTIVITIES (IN \$M)



Financial Position

DECEMBER 31, 2014 AND 2013

	201	ļ	2013
ASSETS			
Cash and cash equivalents	\$ 12,549,25	9 \$	13,621,286
Investments, at fair value	134,689,45	1	132,628,997
Accounts receivable, net of allowance for doubtful			
accounts of \$56,500 in 2014 and \$38,000 in 2013	1,276,74	5	856,023
Pledges receivable, net	1,208,76	L	208,132
Prepaid expenses and other assets	1,578,81)	1,647,745
Equity interest in American Center for Physics	3,162,90)	2,792,354
Land, building and equipment, net	18,720,89	1	15,685,803
Beneficial interest in perpetual trust	548,21	5	536,173
Total assets	\$ 173,735,05	5 \$	167,976,513
LIABILITIES AND NET ASSETS			
Liabilities			
Accounts payable and accrued expenses	\$ 3,094,26	2 \$	3,775,239
Deferred revenues:			
Publications	10,916,454		12,500,703
Membership dues	2,796,438		2,872,840
Other	697,487		553,571
Liability for post-retirement medical benefits	17,520,341		14,808,900
Total liabilities	35,024,98	2	34,511,253
Commitments and contingencies			
Net assets			
Unrestricted	124,580,77)	120,786,008
Temporarily restricted	11,728,62	5	10,297,786
Permanently restricted	2,400,66)	2,381,466
Total net assets	138,710,07	}	133,465,260
Total liabilities and net assets	\$ 173,735,05	5 \$	167,976,513

Statement of Activities

DECEMBER 31, 2014 AND 2013

		2014		2013
CHANGE IN UNRESTRICTED NET ASSETS				
Revenues				
Research publications	\$	37,166,186	\$	35,234,563
Scientific meetings	Ψ	5,588,259	Ψ	5,703,605
Membership operations		4,061,428		3,928,069
Public affairs and programs		2,757,420		2,099,210
Net assets released from restrictions		519,117		584,284
THE BOOKS FOR BOOK TO THE FOREST CONTROL OF STATE OF STAT		50,092,410		47,549,731
Expenses		,,,,,,,,,,,		,,
Program services				
Research publications		28,973,676		27,975,818
Scientific meetings		5,339,114		5,300,146
Membership operations		6,153,559		4,812,395
Public affairs and programs		7,481,050		6,898,090
Prizes and related costs		519,117		584,284
Total program services		48,466,516		45,570,733
Supporting services				
Fundraising		599,609		587,583
General and administrative		2,341,816		2,271,096
Total supporting services		2,941,425		2,858,679
Total expenses		51,407,941		48,429,412
Loss from operations		(1,315,531)		(879,681)
Non-operating activities				
Income from investments		2,818,859		1,843,171
Net unrealized gain on investments		1,190,443		11,696,130
Net realized gain on investments		2,345,392		5,873,378
Equity interest in American Center for Physics		370,555		335,254
Change in post-retirement medical benefits other tha	ın			
net periodic post-retirement medical benefit cost		(1,614,947)		4,487,659
		5,110,302		24,235,592
Change in unrestricted net assets		3,794,771		23,355,911
CHANGE IN TEMPORARILY RESTRICTED NET	AS	SETS		
Contributions		1,278,947		417,079
Income from investments		671,009		627,757
Net assets released from restrictions				
Change in temporarily restricted net assets		(519,117) 1,430,839		(584,284) 460,552
Change in componently received necession		1,130,033		100,552
CHANGE IN PERMANENTLY RESTRICTED NET	Т А :	SSETS		
Contributions		7,160		36,151
Gain on beneficial interest in perpetual trust		12,043		22,685
Change in permanently restricted net assets		19,203		58,836
Change in net assets	\$	5,244,813	\$	23,875,299

2014 Contributions

PS is extremely grateful for gifts received throughout the year from its members and other individuals, corporations, national and international labs, governmental agencies, and institutions. Since membership dues cover only the cost of member services, APS depends to a great extent on external contributions in order to carry out its various initiatives in Education & Diversity, Public Outreach, International Affairs, and Public Affairs.

Last year, \$3.4 million in gifts was received by APS to benefit its programs. This includes a singlelargest gift ever to APS of \$2 million from Jay Jones to establish the newly created APS Medal for Exceptional Achievement in Research. Also included are gifts to our prize and award funds and special projects.

We are pleased to provide special recognition here to donors having made gifts totaling \$100 or more to APS this past year. We are particularly grateful to and pleased to highlight our sustaining individual donors who have made consistent annual gifts totaling \$2,500 or more. These donors are highlighted in blue.

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\$250 TO \$499

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