



Inspiring a Global Community

ANNUAL REPORT 2010



The American Institute of Physics is an organization of 10 physical sciences societies representing more than 135,000 scientists, engineers, and educators and is one of the largest publishers of scientific information in physics. AIP also delivers valuable resources and expertise in education and student services, science communication, government relations, career services for science and engineering professionals, statistical research, industrial outreach, and the history of physics and other sciences. Offering publishing solutions for scientific societies and organizations in science and engineering, AIP pursues innovation in electronic publishing of scholarly journals. AIP publishes 13 journals (journals.aip.org), two magazines — including its flagship publication, *Physics Today* — and the AIP Conference Proceedings series. Scitation, AIP's online publishing platform, hosts 1.6 million articles from 190 scholarly journals, proceedings, and eBooks of learned society publishers. AIP also provides the international physical science community with UniPHY, the first literature-based social and professional networking site; it features pre-populated profiles of more than 300,000 scientists and enables collaboration among researchers worldwide.

Message from Governing Board Chair and CEO

PHYSICISTS WORLDWIDE SHARE A COMMON VISION: to inspire and improve human lives through the knowledge of the physical sciences and their applications to human welfare. The American Institute of Physics (AIP) is proud to be part of the vision. Born from the inspiration of its founding Member Societies to see physics and the physical sciences advance, AIP (as an organization of 10 physical science societies) is in a unique position to deliver on the promise.

IN 2010, AIP CONTINUED EVOLVING to meet the challenge of making global science more accessible and more relevant to present-day scientists' highly specialized needs. AIP's scholarly publishing products (Scitation C³, UniPHY, iResearch) make the results of innovative research broadly accessible. These products, and the content they deliver, face the challenge of constantly competing for the attention and mindshare of their users. During 2010, in its continuing race for relevance amid the changing scholarly publishing landscape, AIP pursued the goals of reaching a global scientific community and getting the right information to the right people at the right time.

AIP TOOK ITS ALREADY DECIDEDLY INTERNATIONAL PRESENCE (e.g., *Physics Today* is one of AIP's most recognizable global brands) to a new level in 2010. In June, AIP officially opened an office in China, in recognition of relatively recent efforts by the Chinese physics community to reach out and expand collaboration. AIP strategically chose to bring the best of global physics to China — which now ranks third worldwide in gross expenditure on research and development, just behind the United States and Japan — and to bring the best Chinese physics to the rest of the world.

THE VITAL CONNECTIONS AND APPLICATIONS OF PHYSICS TO HUMAN WELFARE often may not be transparent enough to the public. AIP raises the public's awareness of such links between physics and other physical sciences and the quality of human life through its well-established Physics Resources Center programs, which ultimately benefit Member Societies and the physics community at large. Specific programs aim to support physicists at every stage of their education and careers, inspire tomorrow's workforce, record the discipline's history, promote diversity, advocate for sound public policy and funding, and help scientists expand their professional connections.

WITH THE DETERMINATION TO BE A STAKEHOLDER-FOCUSED, INNOVATIVE, AND HIGHLY EFFECTIVE ORGANIZATION that delivers valuable programs as a partner to the international scientific community, AIP's race for global relevance continues to gain momentum.



Louis J. Lanzerotti

Louis J. Lanzerotti
Governing Board Chair



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Opening New Doors

AIP opens its first international office in China

FOR MANY YEARS AIP HAS CONDUCTED BUSINESS INTERNATIONALLY, with productive customer relations partnerships in Japan, Europe, the Middle East, India, and the Americas. Yet 2010 is particularly significant because it marked the first step in AIP Publishing's global expansion strategy — on June 17, AIP opened its first international office in Beijing. Representatives of China's scientific funding agencies, research universities, scientific associations, and high-tech business community attended the grand opening celebration. The office is headed by Xingtao Ai, a PhD physicist with extensive experience in publishing.

The market for scholarly publishing has grown exponentially in China over the past 10 years, from about 20,000 published papers in 1998 to nearly 112,000 by 2008 (*Global Research Report: China*, Thomson Reuters, 2009). AIP sees a great opportunity in China—to support Chinese physicists and advance the discipline and collective knowledge of physics. The location allows AIP to form new partnerships, increase the number of Chinese reviewers and editors, and promote connections to Member Societies.

AIP already has seen returns from the new office. AIP was visible at several important Chinese conferences, including the 18th International Vacuum Congress, the Berlin 8 Open Access Conference, and the 10th Asian-Pacific International Symposium on Microscale Separations and Analysis. Staff organized symposia and seminars for the local physical sciences community. The most high-profile event was a half-day symposium,

held during the Chinese Physical Society's fall meeting, where invited speakers addressed publishing issues and presented a mix of technical talks.

Physics Today signed an agreement with *Wuli*, a leading physics magazine published by the Chinese Physical Society, allowing *Wuli* editors to translate and publish three pages from each issue of AIP's flagship publication. Content from *Physics Today* continues to be translated into Japanese for *Parity* magazine.

Chinese physics students are seeing new opportunities through AIP's Society of Physics Students; the first China-based SPS chapter was established in December 2010 at Southeast University in Jiangsu Province. (SPS has 700 local chapters, most of which are in the United States. Abroad, chapters are active in Canada, Mexico, Egypt, and the Philippines.)

UniPHY

A GLOBAL PLAYING FIELD HOLDS THE PROMISE for scientists to build powerful, meaningful collaborations, but its magnitude can also complicate those efforts. Helping scientists connect has led AIP to harness the power of social networking using UniPHY, a platform prepopulated with more than 300,000 scientists' profiles. UniPHY experienced significant growth in 2010, ending the year with nearly 28,000 registered users. The introduction of discussion groups has facilitated the formation of collaborative environments based on common interests; other new features include job postings and a calendar of upcoming conferences and events. The Association of Learned and Professional Society Publishers named UniPHY as a finalist for the 2010 Award for Publishing Innovation.



From the left: John Haynes (AIP Vice President of Publishing), Xingtao Ai (AIP Global Chief Representative in China) greet Peng Bin (Vice President of Science in China Press) and Wu Jianlao (Director of Chinese Physics Letters) at the Beijing Office Grand Opening celebration.

Nearly 100 distinguished guests from premier Chinese academic institutions and scientific government agencies honored AIP with their presence at the grand opening celebration of AIP's Beijing office.

Physics Today

“Sometimes we need to view the science world from a really international perspective; there is no clear leader so the role of your magazine is critical, both inside the US and across the world.”

— READER, PHYSICS TODAY

PHYSICS TODAY COVERS NOT ONLY TODAY'S BEST PHYSICAL SCIENCES RESEARCH, wherever it occurs, but also the interconnections between science and the larger community — national and international affairs, education, and social and world issues. Readers accessed news and science coming from every continent and from all fields of physics-related science and engineering and relevant to a host of issues from nuclear weapons to rapidly changing economic, developmental, and environmental concerns.

Physics Today Online introduced three new departments: Points of View, Singularities, and The Dayside. The number of unique visitors to the site rose 32% in 2010.

Smart Growth

Trusted source for science

AIP'S PRESTIGIOUS JOURNALS (JOURNALS.AIP.ORG) are a key part of physics literature in libraries worldwide. Citations to AIP journals' citations show a nearly 5% overall annual growth, with the highest increases in *Physics of Fluids* (9%), *Physics of Plasmas* (11%), *Chaos* (11%), and *Journal of Mathematical Physics* (15%). The relatively new journal *Biomicrofluidics* had an increase of 190% in total citations. *Applied Physics Letters* and *The Journal of Chemical Physics* continue to be the most highly cited journals in their respective disciplines. (Data are from *Journal Citation Reports*, Thomson Reuters, 2009.)

The number of articles published in *Biomicrofluidics*, one of AIP's newer titles, more than doubled between 2009 and 2010, largely due to special topic issues on themes such as “Optofluidics” and “Dielectrophoresis.” In its second full year of publication, *Journal of Renewable and Sustainable Energy*, a highlight was the publication of a special topic issue “Energy Pathways to a Low-Carbon Society.”

In late 2010, AIP announced the launch of *AIP Advances*. This innovative venture follows a new model for physical sciences publishing. The journal is based on an open access model, and articles are published under a Creative Commons license — authors retain copyright. Authors also benefit from a fast-track publication process. The



Each year AIP manages several professional society meeting exhibitions. The Institute also promotes its core journals and partner journals at exhibits throughout the U.S. and abroad.

journal is led by a team of international executive editors and supported by academic editors from 11 countries on three continents who are responsible for overseeing the peer review process.

Podcast interviews with journal editors, guest editors, and scientific award winners and the series *Virtual Journals in Science and Technology*, copublished with APS, help deliver content of interest to the community. David K. Christen of Oak Ridge National Laboratory was appointed as the new editor of *Virtual Journal of Applications of Superconductivity*; he succeeded John R. Clem, who was at the helm since the journal's inception in 2001.

Promoting AIP science

SCIENCE WRITERS DELIVER THE BEST CONTENT FROM AIP JOURNALS to diverse audiences through AIP's new EurekaAlert! press room, a web-based science clearinghouse for the media run by the American Association for the Advancement of Science. The companion EurekaAlert! Chinese website offers many of the press releases in Mandarin.



Expanding Access

AIP Publishing's global reach

AIP HAS AN EXTENSIVE INTERNATIONAL CUSTOMER BASE with more than 2,250 library customers around the world. AIP also works closely with library consortia—including those in developing countries—to expand their access to content from AIP and its 16 publishing partners. In 2010, those efforts resulted in a 10% net increase in multisite licensing revenues.

The AIP Conference Proceedings series demonstrates the diversity of AIP's authors and readers. Examples of the 124 titles published in 2010 are *Deciphering the Ancient Universe with Gamma-Ray Bursts* (Kyoto, Japan) and *Stress-Induced Phenomena in Metallization* (Bad Schandau, Germany).

Scitation C³

THE SCITATION ONLINE JOURNAL HOSTING PLATFORM is the world's gateway to AIP Publishing content; it hosts more than 1.6 million articles for 30 learned society publishers in physics, chemistry, geosciences, engineering, acoustics, and other sciences. Setting the standard for the future of scientific, technical, and medical publishing is its next-generation platform — Scitation C³. Enhanced features include the following:

- New discovery tools across journals, conference proceedings, and eBooks to aid strategic reading and help users find the content they need more quickly.
- Interactive, full-text HTML rendering that vastly improves visual presentation and navigation, resulting in increased usage.
- A new object browser that allows users to easily access multimedia, tables, and figures directly from the abstract view.
- Superior formatting for mobile devices.

In 2010, AIP migrated all of its archival journals and the first publishing partner journal, AAPM's *Medical Physics*, to Scitation C³. Migration of AIP's other partner journals to the robust interface is scheduled for the first half of 2011.

Central to the creation of Scitation C³ was the incorporation of an agile development environment utilizing a MarkLogic Server and the Polopoly web content management system. AIP was awarded the 2010 MarkLogic Innovation Award for the achievement.

An informed public, an informed Congress

THERE IS AN INTIMATE LINK BETWEEN SOUND SCIENCE AND SCIENCE EDUCATION POLICY, public understanding of science, and funding. AIP works closely with its Member Societies to promote a common set of policy objectives to Congress and couples the effort with strategic communications programs aimed at creating a better-informed public. AIP's science policy fellowships program elevates the role of science in public policy by sponsoring scientists with diverse perspectives to work in the U.S. Congress and the State Department. Staff produced more than 125 *FYI* science policy news bulletins to help the community keep abreast of the latest developments on Capitol Hill.

INSIDE SCIENCE NEWS SERVICE (ISNS) delivers accurate lay language science news to newsrooms around the country. Experienced reporters produce engaging stories with a refreshing take on today's headlines — from the chemistry behind fireworks to the mathematics of home-field advantage in football.

ISNS material appeared on both local and mainstream news websites, including ABC News, Fox News, MSNBC, and Yahoo! News.

DISCOVERIES AND BREAKTHROUGHS INSIDE SCIENCE (DBIS) celebrated its 10th anniversary of increasing the awareness and appreciation for the role that science, technology, engineering, and mathematics (STEM) research and researchers play in the public's daily life through television news. DBIS expanded its partner coalition to include its first group partner — for mathematics. The group consists of the Mathematical Association of America, the Society for Industrial and Applied Mathematics, and the American Statistical Association. Each year DBIS produces 144 stories, and each month DBIS reaches more than 200 million people internationally.

Preserving our history

THE CENTER FOR HISTORY OF PHYSICS AND THE NIELS BOHR LIBRARY & ARCHIVES inspire physicists everywhere through online exhibits that provide accurate and exciting accounts of major people and issues in the history of physics and allied sciences. In 2010, more than 1.1 million people visited the exhibits, and “Bright Idea: The First Lasers,” commemorating 100 years of laser science, made its debut (www.aip.org/history/exhibits.html).

The Library's world-class research collections are a resource to the international community; much of its holdings, including 500 oral history interviews, is available online. The History Center is in the midst of an effort to capture the history of physicist entrepreneurs. The National Science Foundation-funded project will yield a better understanding of how entrepreneurs succeed in shepherding physics-based technology from research to invention to products in the marketplace.

Aligning for Future Success

Investing in leadership

THROUGHOUT 2010, AIP continued its repositioning strategy to effectively lead the physics and scholarly publishing communities. Our success is an expression of the human element — the ability of talented professionals to streamline processes, deliver tools grounded in the latest technology, and build relationships. AIP added several new members to its core leadership team to elevate performance: Darrell W. Gunter, Chief Commercial Officer, Publishing; Philip W. Hammer, Associate Vice

President, Physics Resources; Robert Harington, Publisher, AIP Partnerships; Lisa McLaughlin, Director, Content Operations; Evan Owens, Chief Information Officer, Publishing; Richee-Lori Smith, Chief Development Officer.

Inspiring the leaders of tomorrow

FROM THE HALLS OF CAMPUSES ACROSS THE WORLD to the halls of the nation's capital, AIP's Society of Physics Students (SPS) provides a wealth of opportunities for its undergraduate members—from travel awards to research funding to career opportunities and more. SPS internships, which traditionally focused on research and outreach experiences, expanded in 2010 to include two policy interns funded by the John and Jane Mather Foundation for Science and the Arts. During the summer, one Mather intern served on the House of Representatives Committee on Science and Technology and the other worked in Representative Bill Foster's office. Other 2010 SPS interns conducted research at NASA and NIST, and worked to produce science demonstrations for K–12 students.



SPS intern Alex Tuna (back, second from right) and AIP staff visit with John Mather (back right) and Congressman Bill Foster (back center).

Scientific Community: Diverse Perspectives

A look within the community

THE AIP STATISTICAL RESEARCH CENTER shines light on the demographics, education, employment, and trends of the physics and astronomy communities. The latest available (U.S.) data reveal the following:

- More than 1.3 million high-school students study physics.
- The number of awarded physics bachelor degrees is at a 40-year high.

- PhD-granting departments have more than 5,200 faculty, but only 65 are African Americans and 130 are Hispanic Americans.

Such data can help show where progress is being made and where more attention is needed.

In 2010, staff completed data collection for the Global Survey of Physicists, with 15,000 respondents from more than 140 countries. The study will provide the international physics community with data about the situation of physicists worldwide.

Career pathways

A STRONG STEM WORKFORCE is the essence of our discipline. With support from the National Science Foundation, AIP began a three-year project entitled “Expanding the STEM Workforce by Equipping Physics Bachelor’s Degree Recipients and their Departments to Address the Full Range of Career Options.” The effort seeks to break through misconceptions about the opportunities available to those who earned a bachelor’s degree in physics, to draw more students into the major from all demographic groupings, and to help generate a larger and more diverse STEM workforce.

Seeking to advance their careers, 85,000 unique visitors from more than 20 countries turn to the *Physics Today* Career Network every month. The network pools content from its partner sites: AAPT, APS, AVS, the IEEE Computer Society, and — new in 2010 — the Society of Physics Students. For the second consecutive year, the Career Network was named a top 100 employment site by Weddles LLC, the largest publisher of print guides to web-based job boards.



With support from the Research Corporation, AIP coordinates Nobel laureate visits to minority-serving institutions where they discuss their research and possible career choices with students. Laureate Martin Chalfie (chemistry, 2008) interacts with middle-school students invited to his lecture at Clafin University.

The GradschoolShopper.com website is an open-access resource designed to help prospective graduate students choose a program that can help them shape a rewarding career path in physics and related fields. Redesigned in 2010 to make

navigation effortless, GradschoolShopper.com provides information on admissions requirements, financial aid, housing, degree requirements, faculty, and statistical data on enrollments and degrees.



SPS, together with APS, AAPT and OSA, drew more than 7,500 people to a Laser Haunted House at the inaugural USA Science and Engineering Festival on October 23–24. An undergraduate from New York University instructs a group of (very) early career scientists.

Connecting to industry

MANY OF THE GREATEST COMMERCIAL BREAKTHROUGHS arise from industrial R&D in the physical sciences. AIP's Industrial Outreach programs support physicists in industry through events and forums that build stronger relationships between physicists from corporations and academe. Cohosting events with AIP Member Societies helps promote diverse perspectives across the range of fields related to the physical sciences. Highlights for 2010 included the AIP/APS Industrial Physics Leadership Summit III, "Fueling Future Innovation: Coupling Industry and Universities for Physics Research," and the AIP/OSA 2010 Industrial Physics Forum, "Applications of Laser Technology."

Listening to learn

MAINTAINING INCOMING LINES OF COMMUNICATION with the community helps AIP develop the most relevant tools and publications. The new Student Researcher Forum conducts focus groups on topics such as UniPHY, the journal editorial process, and online content use and functionality.

High-Performing Organization

Streamlining operations

THE CREATION OF THE NEW CONTENT OPERATIONS UNIT in AIP Publishing brings together all content-related operational services and technology: web-based editorial services, content production, content management, online delivery, application development, and project management. With the creation of a new role — the Partner Relations Manager — AIP provides a single point of contact for each of its publishing partners.

Bringing partnership to a new level

EMPHASIS IS PLACED ON GROWING STRATEGIC PARTNERSHIPS to leverage our respective capabilities and amplify the value of partners' offerings to the community. Of particular note: The Laser Institute of America and AIP extended their partnership, and AIP was named publisher of LIA's revamped publication, *Journal of Laser Applications*.

In 2010, AIP maintained its high levels of service across a broad range of offerings to its publishing partners. This included producing 347,000 pages for more than 260 publications from both AIP and its partners and processing \$131 million in subscription fees and membership dues on behalf of AIP and 23 other societies. In a challenging market, advertising sales revenues for journals rose by 5% over 2009 figures. Revenues from exhibit management and booth sales also increased.

MEMBER SOCIETIES

Acoustical Society of America

American Association of Physicists in Medicine

American Association of Physics Teachers

American Astronomical Society

American Crystallographic Association

American Geophysical Union

American Physical Society

AVS: Science & Technology of Materials, Interfaces, and Processing

Optical Society of America

The Society of Rheology

OTHER MEMBER ORGANIZATIONS

Sigma Pi Sigma (the physics honor society)

Society of Physics Students

Corporate Associates

New tools for success

AIP PUBLISHING CONTINUES TO UPGRADE SYSTEMS AND CAPABILITIES to best support the evolving organization. With the adoption of DataSalon's MasterVision service, the division can integrate data on subscribers, online usage, author submissions, and more, thus enabling AIP's marketing team to create highly targeted and innovative campaigns. CrossCheck, a new tool that was integrated into AIP's Peer X-Press review system, helps editors identify duplicate or plagiarized text in submitted manuscripts.



Financials

\$ IN THOUSANDS

	2006	2007	2008	2009	2010
Investments	\$128,512	\$139,329	\$103,858	\$126,126	\$137,656
Total assets	\$169,094	\$178,463	\$139,449	\$165,305	\$172,172
Unrestricted net assets	\$114,141	\$127,767	\$86,595	\$108,852	\$116,651
Annual investment return	12.4%	9.4%	-26.1%	28.0%	12.6%
Total revenue	\$73,049	\$74,773	\$75,775	\$77,432	\$75,956
Publishing Center, net	\$10,541	\$10,628	\$9,017	\$10,947	\$9,550
Physics Resources Center, net	(\$8,682)	(\$9,625)	(\$11,618)	(\$11,360)	(\$11,207)
Net operating revenue (expense)	\$2,229	\$2,144	(\$1,820)	\$311	\$259

AIP Publications

Magazines

Physics Today

Computing in Science and Engineering
(jointly with the IEEE Computer Society)

Journals

AIP Advances (appearing in 2011)

Applied Physics Letters

Biomechanics

Chaos: An Interdisciplinary Journal of Nonlinear Science

Journal of Applied Physics

The Journal of Chemical Physics

Journal of Mathematical Physics

Journal of Renewable and Sustainable Energy

Physics of Fluids

Physics of Plasmas

Review of Scientific Instruments

Journal of Laser Applications (published on behalf of the Laser Institute of America)

Journal of Physical and Chemical Reference Data (jointly with NIST)

Low Temperature Physics

(a translation journal)

AIP spotlight publications

APL: Organic Electronics and Photonics

(selected content from Applied Physics Letters)

Applied Physics Reviews (review articles from Journal of Applied Physics)

JCP: BioChemical Physics (selected content from The Journal of Chemical Physics)

Conference proceedings

In 2010, 124 volumes were published.

Virtual journals

 (jointly with APS)

VJ of Applications of Superconductivity

VJ of Atomic Quantum Fluids

VJ of Biological Physics Research

VJ of Nanoscale Science & Technology

VJ of Quantum Information

VJ of Ultrafast Science

www.aip.org

AIP 2010 awards can be found at www.aip.org/aip/awards.

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