

AIP | Library Matters

News for Librarians

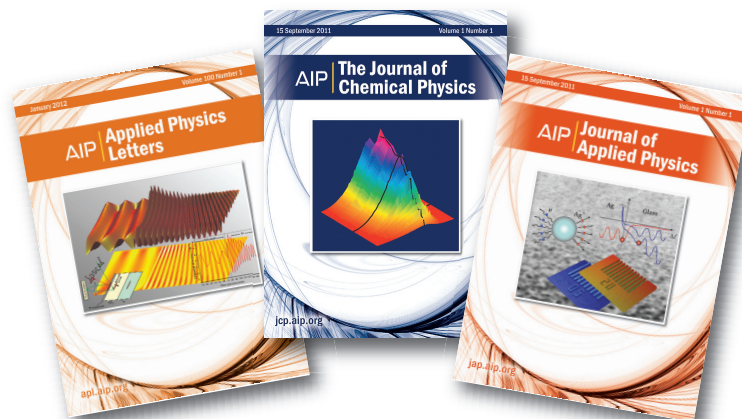
AIP Publishing

Winter 2012

AIP Publishing Unveils Brand Design for Its Portfolio of Journals

As you access your AIP journal content, you'll no doubt notice a change in our journal cover images online. That's because we're moving into 2012 with a refreshed design that unites the AIP collection of top-cited journals across all delivery methods. In keeping with the continuing evolution of AIP Publishing as a distinct, visible and highly respected brand, the redesign mirrors our journal websites and for the first time conveys a strong, consistent branding message for all of our titles, while presenting a showcase for articles featured within our journals.

AIP journals will continue to build on the strong gains made in the last few years, as clearly evidenced by the significant increases in the impact factors of many of our key titles and impressive growth throughout our portfolio of titles. As previously reported, stand-out performances included a 34.6% jump by *Biomicrofluidics* and a more than 15% increase by *Chaos*. Last year also saw a rise of 7.5% in the impact factor of *Applied Physics Letters* and a more than 50% increase in the impact factor of *Journal of Physical and Chemical Reference Data*.



These gains, together with our re-energized brand focus, will allow AIP to continue to publish the very best research in the physical sciences, develop innovative solutions for researchers and better serve the physical science community worldwide.

REVEALING INSIGHTS FROM AIP'S STATISTICAL RESEARCH CENTER

AIP's Statistical Research Center conducts research and contracts with professional societies to carry out surveys on topics of particular concern to their organizations. Within the research portion of its mission, the center collects, analyzes and disseminates data on education and employment in physics and related fields. In this issue of our newsletter we've encapsulated results from three very interesting reports, which were recently published in the center's *focus on* series.

NEW PHYSICS DOCTORATES REPORT ON JOB SATISFACTION

This past fall AIP's Statistical Research Center conducted a follow-up survey of degree recipients from the classes of 2007 and 2008. We asked new PhDs if they considered themselves underemployed. A notable proportion of both potentially permanent employed doctorates and postdocs indicated they did feel underemployed. Postdocs who said they took the position because "other suitable employment was not available" and those who were not pleased with the amount of mentoring they received were more likely to report that they felt underemployed.

Regardless of the type of employment they held, non-US citizens were more likely than US citizens to feel underemployed. PhDs with potentially permanent employment in a field other than physics were also more likely than those in physics to rate the qualitative aspects of their employment less favorably.

While satisfaction levels among postdocs are considerably uniform, differences appear among new PhDs accepting potentially permanent positions. New PhDs holding potentially permanent positions in academia generally reported higher levels of satisfaction with their positions than PhDs working in government or the private sector. This may be related to the fact that the academically employed are more likely to work in physics than are their colleagues in government and the private sector.

When we asked postdocs about mentoring, over three-quarters were pleased with the amount they received. Men reported having a greater level of satisfaction with the amount of mentoring they received than women. The vast majority of postdoc holders felt their postdoc experience would be valuable in terms of furthering their careers.

New Physics continued on page 2

INITIAL CAREER PATHS CHOSEN BY NEW PHYSICS PHDS

In more results from our follow-up survey of degree recipients, we found that new physics PhDs typically followed one of three initial career paths. For the classes of 2007 and 2008, the majority of PhD recipients accepted a temporary postdoctoral appointment, varying in length from between one and three years. One third of new physics PhDs accepted potentially permanent positions and a relatively small proportion accepted temporary non-postdoctoral positions.

The private sector employed the majority of physics PhDs who accepted potentially permanent positions. Almost three-quarters of the new PhDs who accepted a postdoctoral appointment were employed in the academic sector and almost a quarter accepted positions with the government. Of the postdocs employed at a university, about 70% were at a physics department.

The small percent (7%) of new doctorates who accepted temporary positions other than postdocs were working in a variety of positions. Visiting professorships and lectureships comprised the majority of the other temporary positions at the colleges and universities. These were overwhelmingly at physics departments.

The majority of postdocs not only accepted employment within the field of physics, but also in the graduate's dissertation subfield.

In contrast, the fields of employment for new PhDs holding potentially permanent positions were more varied, with about half working in the field of physics and half working in a variety of other fields, mostly other sciences. PhDs with potentially permanent positions in non-physics fields were concentrated in the areas of Engineering, Business, Finance, and Law.

The salaries that new physics PhDs received varied greatly by the type of employment they accepted as well as by the sector in which they worked. PhDs accepting potentially permanent positions in the private sector earned considerably more than those accepting non-postdoctoral employment at a college or university. The typical salary range for postdocs working in the government sector, which includes National Labs as well as other federally run organizations such as NIST and NASA, were considerably higher than for postdocs at universities.

A closer look at university postdocs shows that non-US citizens were paid less than their US-citizen colleagues. The median university postdoc salary for non-US citizens was \$42,500, while the median for US citizens was \$45,000.

To read the complete report, go to www.aip.org/statistics/trends/reports/phdinitial.pdf.

MINORITIES UNDER-REPRESENTED IN HIGH SCHOOL PHYSICS

Black and Hispanic Participation Low: Why?

Results from our Nationwide Survey of High School Physics Teachers showed that in 2009, about 25% of Black and Hispanic high school students in the U.S. took at least one physics course prior to graduation. This is up from 10% in 1990; however it is still well below the 41% of White students and 52% of Asian students. A closer examination of the data reveals that these differences are likely driven more by socioeconomic factors than by race.

To start, high school principals and physics teachers were asked about the socioeconomic status of their students relative to other students in the area. This was done in order to get a sense of the socioeconomic profile of each school and categorize them as worse off, average, and better off.

When this data was combined with race and ethnicity data from the National Center for Education Statistics, we found that less than one-third of White and Asian public high school students attend a school that the principals classify as "worse off." What's more, less than one-fourth of Black and Hispanic public high school students attend

a school that the principals classify as "better off." This difference is stark and provides some insight into the variation in physics taking by race and ethnicity.

In addition, the data showed that a higher percentage of students at "better off" schools attend a school where two or more teachers teach physics: 56% of the seniors attending a "better off" school attend a school with at least two physics teachers. This compares to the less than one-third of seniors attending an "average" or "worse off" school with more than one physics teacher.

Not only do fewer students take physics at the "worse off" schools, but the types of physics courses they take also differs by socio-economic profile. About 10% of the students taking physics at "worse off" schools take AP and second-year physics; almost 20% of the students at "better off" schools take these courses.

The data gathered suggests that the differences are driven, in part, by underlying socioeconomic factors. Other factors also impact physics taking, but it is

unlikely that the racial and ethnic differences will decrease unless these underlying factors are addressed.

To read the complete report, go to www.aip.org/statistics/trends/reports/hst5minorities.pdf.

NEW PHYSICS DOCTORATES

continued from page 1

Both non-US citizens and US citizens (82% and 77% respectively) felt that their advisors were quite helpful or somewhat helpful in planning their careers, but non-US citizens rated their advisor "quite helpful" more often than US citizens (56% vs. 34%).

To read the complete report, go to www.aip.org/statistics/trends/reports/physphdskills.pdf.

KEEP UP WITH WHAT'S HAPPENING AT AIP SUBSCRIBE TO AIP LIBRARY MATTERS

When you subscribe to AIP Library Matters, we'll deliver each quarterly issue to your email inbox as soon as it's ready. To subscribe, modify your existing subscription, or read past issues, go to <http://librarians.aip.org/newsletter.html>



Kim Hukill

From the Stacks: Kim Hukill

Kim Hukill is AIP's very own librarian, holding the position of Assistant Librarian at the Niels Bohr Library & Archive, at the American Center for Physics in

College Park, Maryland. She earned an MLIS from the University of California, Los Angeles, where she also earned a BA in Linguistics. Kim is a member of the American Library Association and the PAM division of the Special Libraries Association. Before taking on her current role at AIP, Kim was a Systems Librarian at Innovative Interfaces Inc. We wanted to speak with Kim about AIP's library and archive collections and what projects they are working on currently.

Most people are aware of AIP as a publisher, but many do not realize that AIP also has a library and archive. What kind of collections does the Niels Bohr Library & Archive have and what is its mission?

The Niels Bohr Library & Archives (<http://www.aip.org/history/nbl/>) is a division of AIP's Physics Resources Center and was founded in 1962. Together with its sister program, The Center for the History of Physics, its mission is to preserve and make known the history of modern physics and allied sciences. As a division of AIP, our core collection is comprised of AIP and member societies' publications and archival materials that can best be preserved at the American Institute of Physics, including photographs, oral histories, books, and other materials. Our broader purpose is to serve as both a repository and a clearinghouse for information in the history of physics, astronomy, geophysics and allied fields.

The Library has a staff of six professionals and five paraprofessionals, plus student interns. Our in-house holdings include an outstanding collection of books including textbooks, monographs, biographies, and related publications; over 30,000 photographs and other images; around 1500 oral histories with many of the outstanding figures in the fields that we cover; and archival records of AIP and its Member Societies as well as other archival records and personal papers of a select number of scientists.

As a clearinghouse, we maintain and update the International Catalog of Sources for the History of Physics and Allied Sciences (ICOS for short, <http://www.aip.org/history/icos/>), which contains descriptions of over 9,000 archival and manuscript collections, oral history interviews, and other primary sources in our fields from around 900 repositories worldwide. We add about 200 new records to ICOS each year. We also have a Physics Finding Aids Website (PHFAWS) that contains cross-indexed finding aids for archival and manuscript collections at archives throughout the U.S. and the U.K. (<http://www.aip.org/history/nbl/findingaids.html>). In addition, the Library and the Center encourage academic and government archives to collect the papers of their physicists and the records of their physics programs.

What are some of the strengths and challenges of your book collection?

In addition to AIP and member society publications, we collect major science monographs, biographies, histories, and multiple editions and translations of textbooks in physics and its allied fields. The latter are certainly important to preserving the historical record, as many libraries deaccession their outdated textbooks. We'll take them! As our book budget is fairly small, we rely heavily on donations and library deaccessions to help fill in gaps in our book collection. However, because of the dates of the material we collect (many of the books we receive date between 1850 and 1950), brittle paper makes up a large part of our collection. In terms of preservation, this generally means that we have more books with special housing needs than we have time and staff to handle them as we would like to; it also means that we have a need to create surrogate use-copies, which historically has meant making microfilm copies. We are looking to begin making digital use-copies of some of our brittle and at-risk titles that are out of copyright and have not been digitized elsewhere.

What are some of the major projects that you are dealing with right now as a library and archive?

On the library side, the major project I have been dealing with is maintaining our print copy of record for the AIP and member society journals: Our journal collection is about to outgrow the physical space available in our stacks. Because of the growth rate, space concerns, and the need to retain the print copy, we will be moving many of our journals to an offsite archival storage facility.

Kim Hukill Interview continued on page 4

TRENDS IN PHYSICS PUBLISHING DURING THE CENTURY'S FIRST DECADE

Science and engineering articles authored at academic institutions in the U.S. have for decades accounted for more than 70% of the approximately 200,000 papers published annually. And according to the National Science Foundation's *Science & Engineering Indicators: 2010* (nsf.gov/statistics/seind10/start.htm), in the past 10 years physics has consistently ranked third among the 10 fields tracked in the number of papers published from academic institutions. Physics trails only biological and medical science.

In some research sectors during the past decade, physics can even be seen to make up the bulk of the articles published. This is true most notably for federally funded research and development centers (FFRDCs), which are research institutions sponsored by federal agencies and administered by universities, industry, or other

nonprofit institutions. In the last 10 years, authors of physics papers at FFRDCs accounted for about 40% of the total articles published by FFRDCs. In fact, the 16 FFRDCs sponsored by the Department of Energy, which dominated science and engineering publishing by this sector, published 95% of the sector's articles in physics.

A number of other trends have emerged, as well, related to the sub-disciplines of physics from which papers were published. Over the dozen years covered here, a number of fields experienced a more than 50% growth, including fluids & plasmas, mathematics, and particles & fields. But the one figure that jumps out is the huge increase in the number of applied physics articles from 23,000 in 1999 to more than 40,000 in 2010. That 2010 total of applied physics articles represents 30% of all the physics articles published that year.

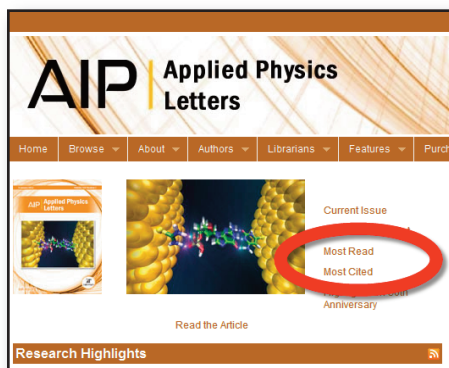
AIP PARTNERS WITH PUBLISHING TECHNOLOGY



AIP and Publishing Technology plc recently announced a new partnership to build the next generation of AIP's Scitation platform, scheduled for launch in the fourth quarter of 2012. We believe that your patrons will be well served by this flexible platform, which will house an impressive combined portfolio of AIP and its Member Society publishing partner journals and conference proceedings, as well as *Physics Today* magazine and historical documents from AIP's Physics Resources Center. AIP is committed to making the transition as seamless as possible for the library community and your patrons and will keep you abreast of migration developments as appropriate.

SCITATION ADDS NEW FEATURES TO ENCOURAGE BROWSING CONTENT

The Scitation team has updated the AIP journal home pages, changing featured articles "stacked" on the journal home pages to tabs in order to bring more content above the fold. The new tabs are on *AIP Advances* and will soon be included on every AIP journal. Readers can browse each journal's "research highlights," "most read," "most recent," and soon, "most cited" articles, without leaving the home page.



KEEP IN TOUCH

Have questions about AIP content?
Customer Service is waiting
to assist you at ...

+1-800-344-6902
(USA AND CAN ONLY)

+1-516-576-2270

SUBS@AIP.ORG

KIM HUKILL *continued from page 3*

On the archives side, digital initiatives are a major part of our current projects. The first collections that we made available online and that we continue to work on are our most heavily used collections: our photo collection and our oral histories. We have now digitized nearly 23,000 photographs and put them up on our Emilio Segrè Visual Archives website (<http://photos.aip.org/>). We have also continued to work to digitize transcripts of our oral history interviews and make them available online: The first round of 500 interviews was started in June 2007 and completed in 2009, funded by a grant from the National Endowment for the Humanities. We received a second grant in June of 2011 and have digitized 150 more of the 500 total that we hope to have completed by 2013. We are also beginning to add more voice clips from the interviews and are working to enable keyword

AIP ONLINE JOURNALS OFFER MATHJAX TO DISPLAY MATHEMATICS

MathJax AIP has partnered with MathJax, an open-source JavaScript display engine that produces high-quality math in all modern browsers, without special set-up requirements. Using MathJax, readers of AIP online journals can now copy equations from journal articles and paste them directly into Word and LaTeX documents, science blogs, MathType, and research wikis. Equations can also be copied and pasted into calculation software like Maple, Mathematica, and others. MathJax supports the use of STIX fonts, which will improve MathJax's speed when rendering mathematics. To see MathJax in action, visit http://jmp.aip.org/jmp_50th_anniversary.

searching of the interview transcripts. In 2011, we also completed a project to make our first digitized collection of personal papers available online: The Samuel A. Goudsmit Papers, 1921-1979. This project, which took a little over two years to complete, was headed by our Senior Archivist and was partially supported by a grant from the U.S. National Historical Publications and Records Commission.

SEE US AT THESE UPCOMING 2012 EVENTS

DATES	CONFERENCE	LOCATION
Feb 27 – Mar 2	APS March Meeting	Boston
Mar 25 – 29	ACS Spring Meeting	San Diego
Mar 26 – 28	UK Serials Group Annual Conference	Glasgow
April 2 – 4	ER&L Conference	Austin
April 13 – 16	Chinese Chemical Society Annual Meeting	Sichuan Province
April 25 – 29	MRS Spring Meeting	San Francisco
May 23 – 26	International Conference on Advances in Microfluidics and Nanofluidics	Dalian
May 26 – 31	World Congress on Medical Physics and Biomedical Engineering	Beijing
Jun 7 – 10	NASIG Annual Conference	Nashville
Jul 15 – 18	SLA Annual Conference	Chicago

LOOKING FOR AIP PRODUCT INFO?

Visit librarians.aip.org for links to our online Journal Catalog, Digital Archive product information, and other library specific products and services.