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CSWP Gazette

The Newsletter of the Committee on the Status of Women in Physics of the American Physical Society

INSIDE

Letter from the Guest Editor

By Kimberly Budil, Lawrence Livermore National Laboratory

Kim Budil

The numbers are very compelling. Roughly half of all physics Ph.D. recipients will take jobs in industry or national laboratories, with women choosing this career path at a slightly higher rate than their male colleagues. Physics still faces a clear challenge in increasing the participation of women in the field and improving the climate at academic institutions is a critical piece of this. At the same time it is important to ensure that the environment that women encounter once they have successfully navigated the educational pipeline allows them to have fulfilling and successful careers.

The challenges faced by women in these workplaces are similar in many ways to those encountered by women in academia. They are entering a profession where women are still strongly outnumbered by men (less than 15% of physics Ph.D.s are awarded to women) so they will have few, if any, women peers with whom they work directly. They may feel shut out of the traditional networks where new employees "learn the ropes" of the organization or have difficulty joining in hallway conversations as the only woman. They will often discover that the policies of their employer do not support the needs of women with families, perhaps limited or nonexistent maternity/paternity leave policies or a lack of available, high quality childcare. Add to this the often aggressive style of many scientists ("combat physics") and the working world can seem very chilly indeed.

However, women in these workplaces have some advantages that their academic colleagues do not. Industrial employers and national laboratories are large technical organizations, often with workforces numbering in the thousands. My employer, the Lawrence Livermore National Laboratory (LLNL), has a workforce in excess of 7500 people, approximately 2500 of them pro-

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Profile: Cherry Murray

By Kimberly Budil, Lawrence Livermore National Laboratory

Cherry Ann Murray became the Deputy Director for Science and Technology at the Lawrence Livermore National Laboratory in December 2004. In this role, she will be responsible for the institutional strategy for science and technology as well as providing oversight for efforts to recruit, develop and retain the Laboratory's scientific, engineering and technical workforce. The DDST also directs the institutional research and development portfolio, a roughly $110 million program. Murray views this job as a new and exciting challenge in a very successful career.

Murray has also been named the recipient of the 2005 George E. Pake Prize of the American Physical Society. This prize is awarded to recognize and encourage outstanding work by physicists combining original research accomplishments with leadership in the management of research or development in industry. The citation for the award reads, "For fundamental studies in surface and scattering physics, and for leadership as Senior Vice President of Bell Labs Research, Lucent Technologies overseeing Bell Laboratories at an important time in its history." (Murray left Bell Labs to take on the deputy director role at Lawrence Livermore.)

After receiving her B.S. and Ph.D. degrees in physics from the Massachusetts Institute of Technology, Murray expected to take on a postdoctoral research position, a traditional starting point for a scientific career. However, she was surprised to be offered a position as a member of the technical staff at Bell Labs upon her graduation in 1978. Thus began what would be a 26-year career in industry.

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Publication Information

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Letter from the Guest Editor, continued

fessional scientists and engineers. Of this 2500 about one quarter are women working as physicists, chemists, biologists, computer scientists, and engineers. While they are dispersed throughout the organization, it is still possible to draw them together to form a network as well as to advocate for changes that will improve the work environment for men and women alike. These organizations have a unique opportunity to improve the workplace for large numbers of technical women at once. The national laboratories, I believe, bear a particular responsibility to be role models as enlightened and progressive employers since they are government institutions, created to serve the needs of the nation through science and technology. These laboratories should represent the diversity of our society and strive to ensure equal access and opportunity for all aspiring scientists who have the interest and the skills to succeed.

In the Fall 2001 issue of the Gazette, I wrote about an important, galvanizing experience for the technical women at LLNL. In 1999, when Congress approved legislation forming the Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development (CAWMSET), Congresswoman Ellen Tauscher, whose congressional district includes LLNL and the California site of Sandia National Laboratories, encouraged us to reach out to the commission. She told us that the views of women at the national labs were unlikely to be heard by the CAWMSET and, by its composition and charter, that it would largely focus on pipeline rather than workforce issues, which are very important in northern California, home to several national laboratories as well as the Silicon Valley.

At her urging, on November 10, 1999, we staged a one day, highly interactive forum, "Strategies Within—Forging New Realities for Women in Science, Engineering and Technology," to discuss issues and devise strategies for women in technical workplaces. We invited women from all across the San Francisco Bay Area representing national laboratories, academic institutions, and industry. Two of the CAWMSET commissioners attended the forum. In a remarkable surge of productivity, we delivered our report to the CAWMSET less than one month after the forum. This report, carrying the same title as the forum, was cited by the Commission as one of its key sources in compiling its final report. When we briefed Congresswoman Tauscher about the results of the forum she had only one question for us: "When is the next one?"

On March 22, 2002, the second forum, entitled "Framing the Model Workplace," was hosted by Sandia National Laboratories (SNL) in Albuquerque. This forum focused on the technical women working at the national laboratories of the National Nuclear Security Administration (NNSA is a semi-autonomous agency within the Department of Energy) including LLNL, the Los Alamos National Laboratory (LANL) and SNL. The subject matter of this forum grew out of the concluding section of the report from the first event. There we had discussed the need for a vision of "Workplace 2005", a model for a technical organization that would be diverse, flexible, supportive and inclusive. The forum was organized around discussion groups that focused on career development, mentoring and networking, work/life balance, and communication. Our keynote speaker was Debra E. Meyerson, a visiting professor of organizational behavior at Stanford University, from whom we learned about strategies for culture change in organizations. In her research she has focused on the idea that true, systemic culture change is best accomplished through an accumulation of "small wins" or incremental changes that, over time and when taken together, can fundamentally reshape an organization.

Two years later on October 27, 2004, this same group of women (and many more) participated in the third in this series of technical women's forums, "New Directions – Women of Influence in the National Laboratories," hosted by the Lawrence Berkeley National Laboratory. I had been away from LLNL for the past year on a temporary assignment at NNSA Headquarters in Washington, D.C. and welcomed the chance to travel back to California and spend the day with my "co-conspirators" from the previous forums, a group of women I have come to value deeply. I spoke to the group about the genesis of the first forum and the progress we have seen since then and was struck by how much had happened and how little time had actually passed since we began this journey. I spent the day renewing relationships with longstanding colleagues and making new friends. It was, as always, a remarkable and inspiring experience.

However, the story of these forums is less about the events themselves than about the profound changes they have wrought, both in the participants and in the institutions that these women represent. I have become more reliant on my network of women colleagues with each passing year of my career. Early on, I did not understand the need to have women to whom I could talk. It was only over the accumulation of several years experience at LLNL that I came to feel the distinctly different issues faced by technical women. While I was quite used to having a majority of male colleagues and mentors, many of whom have had long-lasting positive impacts on my career, I became more aware of the unique experience of women in the organization. Now it has become habit for me to take a quick headcount at a meeting to see what the proportion of men to women is, often many tens to one. This is not a value judgment on the men or the environment, but rather a simple acknowledgment that the world looks different from the minority position.

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Letter from the Guest Editor, continued

The first forum marked a distinct turning point for me and many of my colleagues regarding women's issues in the technical workforce. We learned that we had the authority to speak on the issues confronting technical women in the workplace, not because of our formal leadership roles but rather by virtue of our experience. Our authority on the subject was earned "on the job", so to speak, and there was power in sharing our stories. We learned that the leadership of our laboratory, largely male and late in their careers, had good intentions but few good ideas upon which to act. When we offered suggestions for strategies to address issues we had identified we were welcomed and their response was swift and affirmative. We worked hard to always identify a role we could play in the implementation, so the message was not "you fix it" but "here's how we can help". Finally, we have maintained our network, a vital resource to draw together the women dispersed across our laboratory. While this group may not meet on a regular basis, I know that there are women colleagues I can call upon for support, advice, or just to commiserate.

The changes in our institution have also been quite extraordinary. While many things have changed from our pay and performance system to the initiation of yearly workforce reviews, one difference at LLNL particularly stands out. We identified the lack of women on the senior leadership team of the laboratory as an issue at the first forum and made changing this a top priority. Our group worked very hard to ensure that search committees for senior positions had resources to help them develop diverse candidate pools and even recruited well-qualified women candidates on several occasions. The result of this is that over the past five years three women have joined the ranks of the Associate Directors at LLNL (there are twelve Associate Directors in all) and women currently lead the Computations, Energy and Environment, and Administration Directorates. Most recently Cherry A. Murray (profiled on page 1 of this Gazette) was named Deputy Director for Science and Technology, where she will lead and oversee science and technology activities for the entire Laboratory. Over this same period of time numerous women have begun to move into leadership roles at lower levels in the organization, including many of the women from the forums. While there are still issues to be addressed and we maintain an ongoing dialogue with our leadership, the "face" of LLNL has been changed forever.

Note: the CAWMSET report can be read at *http://www.nsf.gov/od/cawmset/.*

Our group worked very hard to ensure that search committees for senior positions had resources to help them develop diverse candidate pools and even recruited well-qualified women candidates on several occasions.

Profile: Cherry Murray, continued

Upon arriving at Bell Labs, Murray expected to continue her graduate research on light scattering and infrared absorption from molecules adsorbed on surfaces but was soon moving in other research directions. Bell Labs was a stimulating scientific environment, with scientists from many different disciplines working side-by-side and collaborating on new ideas. Murray's primary focus was on surface science and various experimental techniques to probe the behavior of materials. This included work on surface-enhanced Raman scattering, which was used to investigate molecules on rough silver surfaces.

As technologies evolved, Murray constantly looked for new ways to apply them to the problems that intrigued her. After hearing from her colleague about the use of CCD cameras in astronomy, and in particular the advent of cooled CCDs that greatly improved their signal-to-noise characteristics, Murray applied them to surface scattering studies investigating Langmuir-Blodgett films. She also collaborated on measuring positron work functions.

At a meeting of the American Physical Society, she heard about the use of colloidal polystyrene microspheres to make scattering measurements. Murray wondered whether it might be possible to directly observe the motion of the spheres rather than using them for an indirect measurement like scattering. This led her to borrow a microscope, along with the office it resided in, and begin to study melting of a two dimensional crystal of colloidal spheres. The microscope, coupled to a video camera, allowed Murray to directly image the microspheres, measure the equilibration time of dislocations in the material and show that the melting observed was consistent with a 2D Kosterlitz-Thouless-Halperin-Nelson melting mechanism, and that the colloidal system was equilibrated, unlike several earlier simulations.

Murray was made a Distinguished Member of Technical Staff in 1985.

After spending nine years at Bell Labs, the job of Department Head for the Low Temperature Physics Department opened and Murray was asked to take on the challenge. She was enjoying her scientific research a great deal and had recently had her first child, a son. However, she considered who might take the position if she did not and asked the question that would form

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Profile: Cherry Murray, continued

As she has been throughout her career, Murray is drawn to an environment where scientists are at work solving large complex problems.

the basis of many of her subsequent career decisions: "Who would I rather have making the decisions?"

The answer to that question led Murray to take on the department head job, thereby setting two important precedents for Bell Labs: she was the first woman to lead a large physics department, and the first department head at the Lab to give birth–her daughter was born five years later.

Over the next 10 years Murray would serve as Department Head for Condensed Matter Physics (1990), and then the Semiconductor Physics Department (1993). In 1997 she was promoted to Director, Physical Research Lab. This was a difficult time for Bell Labs. AT&T had divested the Baby Bells and the budget for the Lab was declining. There were a number of reorganizations and the new management of the Lab was not supportive of maintaining the Lab's traditional emphasis on physicists in its workforce. The Lab was split, with AT&T keeping activities and staff in math, artificial intelligence, speech and multimedia. The rest spun off into Lucent Technologies. Over the next two years, approximately 40% of the Lab workforce left, yet Murray was able to convince the management of the importance of replacing those people. She managed to hire in more new people than the Lab had lost, thus revitalizing the Physics Lab.

Murray was made Senior Vice President for Physical Sciences in 2000. She emphasized the importance of the Lab doing more goal-oriented, applied research, stressing the need for both scientific and business relevance. She managed several groups that contributed to the development of innovative optical and wireless networking products. This mix helped maintain the vitality of the physical sciences at the Lab. Murray managed the transition of Bell Labs as Lucent spun off its microelectronics business as Agere Systems – and Agere took with it approximately 400 researchers from Bell Labs, including more than half of her division. Murray led the Research-wide strategy process and was for two years the Research executive relationship manager to Lucent's largest business unit.

Murray assumed the post of Senior Vice President, Research Strategy, Wireless & Physical Sciences Research at Bell Labs, Lucent Technologies in 2001. During that tenure she also championed the creation of the New Jersey Nanotechnology Consortium, a collaborative effort between industry, state universities and government with a facility managed out of Bell Labs. She became Chair in 2003.

Murray has received numerous awards and professional society memberships. She is a member of the National Academy of Sciences, the National Academy of Engineering, the American Physical Society, the American Chemical Society, the Optical Society of America, the Materials Research Society, the American Association for the Advancement of Science, the National Academy of Engineering, and the American Academy of Arts and Sciences. She is a Fellow of the American Physical Society and the American Association for the Advancement of Science. She currently serves on the Council of the National Academy of Sciences and on the Governing Board of Argonne National Lab.

Murray was named one of the top 50 women in science in 2002 by Discover Magazine. She has been awarded two patents and has an extensive publication list.

After her rewarding career with Bell Labs, Murray is now embarking on another adventure at LLNL. She views the job of the Deputy Director for Science and Technology as a new and exciting challenge, affording her the opportunity to pursue the activities she truly enjoys. These include strategic planning, involvement in both fundamental science as well as hard-core engineering and systems research, and the opportunity to join another broad and highly interdisciplinary scientific organization.

While the current situation for the national laboratories is difficult due to competing budget priorities and diminishing discretionary resources, Murray believes a resurgence of support for the national security labs is coming. She attributes this to the rising importance of homeland security, the emphasis on nonproliferation, the need to develop nuclear energy since there are no viable alternative energy sources available in the near term, and the need to sustain the economic security of the United States.

As she has been throughout her career, Murray is drawn to an environment where scientists are at work solving large complex problems. She sees a vital role for someone with her experience to help convince LLNL's customers that it has the solutions. Murray points to LLNL's role pursuing "goal-driven basic science," where new discoveries can arise out of work done in support of the Laboratory's mission, as analogous to Bell Labs where their mission was telecommunications rather than national security.

Progress for Women in the Division of Plasma Physics

by Martha H. Redi, Princeton Plasma Physics Laboratory

While the representation of women in physics remains low (approximately 15% of physics Ph.D.s) their representation in certain fields is smaller yet. Five years ago, in response to many discussions with women in the Division of Plasma Physics of the American Physical Society, we surveyed the situation for women in plasma physics and subsequently drafted a letter to the APS Executive Committee that was signed by 20% of the women who were members of the Division of Plasma Physics (DPP). The letter pointed out that there were anomalously few women in the Division (roughly half the percentage found in other Divisions of the APS), very few women fellows in plasma physics and that while we greatly enjoy working in the field, we felt that women's contributions to the field were not being appropriately recognized through receiving invited talks, Division committee assignments or being elected to fellowship in the APS.

Five years later seems an appropriate time to take stock of how things have changed in the DPP. In fact the changes in DPP are nothing short of astounding. The response by the leadership of the DPP to the women's letter was swift and far reaching. They were very concerned by the statistics presented, which painted a picture they had not clearly seen before and the issues facing women DPP members. A standing committee was established, the Committee for Women in Plasma Physics. This Committee serves the DPP by monitoring the membership, the number of invited talks given by women at each meeting, the distribution of committee assignments, the assignment of session chairs and, most importantly, advocating for the nomination and election to fellowship of well-qualified women in the Division.

One of the DPP's first actions was to establish an award for the most outstanding early career woman (within ten years of receiving her Ph.D.) in plasma physics. $30,000 was raised, half from Division funds and half from friends and colleagues of Dr. Weimer, for whom the award was named. Katherine E. Weimer was a pioneering, research physicist at the Princeton Plasma Physics Laboratory at Princeton University. She made many important contributions to research advancements in magnetohydrodynamic equilibrium and stability theory for magnetically confined plasmas. In 2003 the first recipient of the award was selected, Prof. Yu Lin of Auburn University. Prof. Lin was recognized for her theoretical and computational research in nonlinear physics in the boundary layers of space plasmas. The second call for nominations has been issued with a deadline of April 1, 2005.

The APS has provided assistance to the Division as well through arrangements for a networking luncheon for women at the annual DPP meeting, typically held on the first full day of the conference. This luncheon has grown to 40-50 women, with typically at least half of the participants being students. The DPP Executive Committee underwrites the cost of this lunch so students can attend for $10. Another very popular activity is the Women in Plasma Physics Reception, held the first evening of the conference. The Reception is attended by hundreds of conferees, both men and women, and features a speaker discussing an issue relevant to concerns of women in physics along with complementary refreshments. This event is an opportunity to provide attendees with information and resources for improving the situation for women in physics at their home institution as well as to build a network of women in plasma physics.

One of the key indicators of technical success is the recognition of being asked to give an invited talk at the annual meeting. Such recognition is critical to career advancement and, for early career scientists, to finding a job. Due to the diligence of the Committee for Women in Plasma Physics and the efforts of the DPP Executive Committee to raise the awareness of conference program committees, women are now regularly receiving these important invitations.

Finally, the Committee has worked to ensure that deserving women are being nominated for fellowship in the DPP. An APS investigation of the number of women fellows has indicated that women were being elected in rough proportion to the rate at which they were being nominated. This suggested that many successful women in plasma physics needed sponsors and DPP members were strongly encouraged to consider nominating a female colleague. The number of women fellows in the DPP has grown from 4 to 17 since 1999.

The representation of women in leadership roles in the DPP has also improved dramatically. The present chair of the DPP is Jill Dahlburg of the Naval Research Laboratory and the chair-elect is Melissa Douglas of the Los Alamos National Laboratory. Martha Redi (PPPL) is chair of the Nominating Committee, Gail Glendinning (Lawrence Livermore National Laboratory, LLNL) is the chair of the Committee for Women in Plasma Physics and Christina Back (LLNL) is a member of the APS Executive Committee. In addition, women plasma physicists are being included on important national committees advising DOE. Cynthia Phillips, PPPL, and Amanda Hubbard, MIT, have participated in FESAC panels in the last few years.

In the academic community, progress is being made as well. More than 20% of graduate stu-

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In fact the changes in DPP are nothing short of astounding.

Progress for Women in the Division of Plasma Physics, continued

dents in plasma physics programs at major research universities are women, and we are pleased that the environment in which they will pursue their careers is steadily improving. However, there are still concerns to be addressed. For example, while women are relatively well represented in astrophysics and space plasma faculty, there are only two female professors of fusion science plasma physics (Linda Vahala, Old Dominion University, and Halima Ali, Hampton University) versus 105 male professors in this subfield.

A great deal has changed in the DPP. The response of the DPP leadership to the concerns of the women members has been overwhelmingly positive and effective. The lesson from the experience of the women in the DPP is that it is worthwhile to raise awareness of issues and to continuously monitor progress.

Annual Scholarship Established for Women in Physics

By Darlene Logan, APS Director of Development

"Everything I have came from physics, so everything has to go back to physics."

M. Hildred Blewett

The APS has been designated the primary beneficiary of a bequest of over $1 million from Hildred Blewett, an accelerator physicist who died in June 2004. Hildred Blewett was passionate about physics, so much that she left nearly everything she had to APS, for scholarships for women in physics.

While signing the will shortly before she died, Mrs. Blewett said, "Everything I have came from physics, so everything has to go back to physics," recalled Frank Malinka, Mrs. Blewett's financial advisor.

M. Hildred Blewett was born in Ontario on May 28, 1911. She began her career in physics working at General Electric in Schenectady, New York, in the 1940s, where she developed a method of controlling the pollution from smoke from factory chimneys. In 1947 she and her then husband, John Blewett, were among the original team members at Brookhaven National Laboratory. Mrs. Blewett later worked at Argonne National Laboratory, and then at CERN. She retired from CERN in 1977 and moved to Vancouver she died June 13, 2004, at age 93.

Mrs. Blewett had always been good at mathematics and physics, said her brother, Talmage Hunt. Her father, an engineer who became a minister, supported her interests.

Few women went into physics at the time, and those who did often faced discrimination, but Blewett was a strong woman who did what she wanted to do. But she always felt she was being kept down in her career because she was a woman, said her brother Talmage Hunt. This feeling may have been one of the reasons she wanted to set up a scholarship specifically for women, said Hunt.

Another factor that may have influenced her decision was that she had grown up in a poor family, and at one point had to take a year off from college because she didn't have enough money, said Malinka. "She didn't have any money to keep going to school, and she had to discontinue her studies, which was her absolute passion. So she would like to see that that doesn't happen to women these days," said Malinka.
Having grown up with little money, Blewett always accounted for her every penny, and lived modestly throughout her life. "Until the time she died she could tell you exactly how much change she had in her purse," said Hunt.

Though she was married for some time to John Blewett, another accelerator physicist, the pair divorced in the 1960s, and Hildred Blewett never remarried or had children.

Aside from physics, she loved traveling, opera, and reading. "She was an avid reader, even after losing most of her eye sight and she had to read large print books. She would read a couple dozen books a month," said Hunt. In her will, Mrs. Blewett also left about $20,000 to the Vancouver Public Library Outreach Service, which delivered boxes of books to her home each month.

The rest of her money will come to APS. "She really felt that what she had should go back to physics. It was really important to her," said Malinka.

The Scholarship will be known as the M. Hildred Blewett Annual Scholarship for Women in Physics. Eligible candidates will be women who have had to give up doing research for a time due to family or other reasons, but would now like to resume their career.

Details on the application process will be available on the CSWP website at *http://www.aps.org/educ/cswp/index.cfm*

Special Events at APS Meetings

APS Annual Meeting
Los Angeles, California

Sunday, March 20, 2005
8:30 am – 5:00 pm
Professional Skills Development Workshop for Women Physicists (Westin Hotel)
Workshop for mid-career tenured women faculty to develop communication, negotiation and leadership skills. Reception for participants to follow. (Participants must be pre-registered)

Monday, March 21, 2005
11:15 am – 2:15 pm
Session B7 (Convention Center)
"Women at the Forefront of Biophysics"
Co-sponsored with the Division of Biophysics
Speakers:

- Ilme Schlichting, Max Planck Institute, "X-ray Crystal lographic Studies of Protein Structure and functions"
- Marilyn Gunner, City College of New York, "The Role of Buried Charged Groups in Proteins"
- Michelle Wang, Cornell University, "Single Molecules Studies Using Optical Trapping and Fluorescence Techniques"
- Tamar Schlick, New York University, "Computational Studies of DNA and DNA-protein Interactions"

Session D3 (Convention Center)
2:30 pm – 5:30 pm
"Diversity: Issues and Remedies"
Co-sponsored with the Committee on Minorities in Physics Speakers:

- James Gates, Univ of Maryland, "Einstein on Diversity"
- Rachel Ivie, American Institute of Physics, "Women and Minorities in Physics 2004"
- Katja Lindenberg, UCSD, "Faculty Gender Equity Study at UCSD: The Successes, The Problems, and Some Remedies"
- Keith Jackson, LBNL, "The Status of African American Physicists within the DOE Laboratories"
- Myra Gordon, Kansas State University

Tuesday, March 22, 2005
7:30 am – 9:30 am
CSWP/FIAP Networking Breakfast (Westin Hotel)
Enjoy a full breakfast and network with colleagues! Laura Smoliar of Lightwave Electronics will be the featured speaker. Cost: $20. All are welcome, both men and women. Students are free, however you must pre-register at *http://www.aps.org/meet/MAR05/special.cfm#breakfast* (pdf file). Only limited walk-ins can be accepted.

Wednesday, March 23, 2005
6:00 pm -7:30 pm
CSWP/COM Reception (Westin Hotel)
Co-sponsored with the Committee on Minorities in Physics. Enjoy refreshments, network with colleagues, and hear about the work of the committees.

APS Annual Meeting
Tampa, Florida

Friday, April 15, 2005
8:30 am – 5:00 pm
Professional Skills Development Workshop for Women Physicists
Workshop for mid-career tenured women faculty to develop communication, negotiation and leadership skills. Reception for participants to follow. (Participants must be pre-registered)

Saturday, April 16, 2005
10:45 am – 12:33 pm
Session B4
"To the Heart of the Matter"
Co-sponsored with the Division of Nuclear Physics
Speakers:

- Claire Mazzocchi, Oak Ridge National Laboratory
- Xiaochao Zheng, Argonne National Laboratory
- Jennifer Klay, Lawrence Livermore National Laboratory

Sunday, April 17, 2005
12:00 pm – 1:30 pm
CSWP/DPF Networking Luncheon (Florida Salon I)
Buffet luncheon and an opportunity for networking with colleagues! Helen Quinn, past-president of APS, will speak. Cost: $20 ($5 for students). All are welcome, both men and women, however pre-registration strongly advised as there will be only limited space for walk-ins. Register at *http://www.aps.org/meet/APR05/social.cfm#cswp* (pdf file).

All April events will take place in the Marriott Waterside Hotel.

Nineteen Women Named to Fellowship in the APS

By Sue Otwell, APS Staff

Nineteen women are among the 205 new Fellows of the American Physical Society. Each new fellow is elected after careful and competitive review and recommendation by a fellowship committee on the unit level, additional review by the APS Fellowship Committee and final approval by the full APS Council. Only 1/2 of 1% of the total APS membership is selected for Fellowship in the Society each year. A listing of all 2004 Fellows as well as information on the Fellowship program and how to nominate an individual, may be found at *http://www.aps.org/fellowship/2004/index.cfm*

The new women fellows, with their citations, are:

Christina Allyssa Back
Lawrence Livermore National Labs
Plasma Physics
For the quantitative application of x-ray spectroscopy that has advanced the understanding of high energy density plasmas in the areas of x-ray hohlraums, radiation transport, and high efficiency radiation production.

Daniela Bortoletto
Purdue University
Particles & Fields
For important contributions to top and bottom quark physics, and leadership in the development and fabrication of precision silicon detectors.

Ulrike Diebold
Tulane University
Materials Physics
For groundbreaking research on the role of defects in the interplay between bulk and surface properties of transition-metal oxides and on STM imaging of their surface structure.

Malgorzata Dobrowolska
University of Notre Dame
DCMP (Condensed Matter)
For her seminal contributions to the understanding of the role of electron spin in optical transitions in semiconductor compounds and alloys, including magnetic semiconductors and their nanostructures.

Graciela Beatriz Gelmini
UCLA
Particles & Fields
For outstanding contributions to the theory of cosmological dark matter, neutrino mass, and the astrophysics of the highest energy cosmic rays.

Jacqueline N. Hewitt
MIT
Astrophysics
For pioneering investigations of gravitational lenses using radio astronomy, application of gravitational lens studies to cosmology, and leadership in astronomy.

Ann Renee Karagozian
University of California, Los Angeles
Fluid Dynamics
For extensive contributions in the fluid mechanics of combustion systems, including the study of jets in crossflow, strained flames distorted by complex flows, acoustically driven reactive cavity flows, and detonation phenomena.

Katrin Kneipp
Wellman Center for Photomedicine & Biophotonics
Forum on Industrial and Applied
For contributions to the application of Raman scattering in nanotechnology and the biomedical field.

Arlene Judith Lennox
Fermilab
APS
For her leadership in the field of neutron therapy.

Jane Lipson
Dartmouth College
Polymer Physics
For the insightful use of theory to understand the properties of polymers.

Corinne Alison Manogue
Oregon State University
Forum on Education
For her role in the development of the innovative Paradigms Curriculum for upper level physics majors and for providing students with a bridge between vector calculus and physics using differentials.

Mary Beth Todd Monroe
Southwest Texas Junior College
Forum on Education
For her national leadership and service to the American Physical Society, the American Association of Physics Teachers, and the Two Year College project and for fostering professional identity among two-year college physics teachers and making their importance in education evident to policy makers and the physics community.

Annick Pouquet
National Center for Atmospheric Research
Fluid Dynamics
For her many contributions to the development and application of statistical methods and numerical simulations in turbulent hydrodynamic and magnetohydrodynamic flows for viscous, inviscid, and compressible fluids.

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Nineteen Women Named to Fellowship in the APS

Manijeh Razeghi
Northwestern University
Laser Science
For her pioneering work on optoelectronic quantum devices including quantum well infrared detectors, quantum cascade lasers, high power lasers, GaN-GaAIN visible and UV emitters and detectors.

Caroline Anne Ross
Massachusetts Institute of Technology
Materials Physics
For innovative research into the magnetic properties of thin film and nanoscale structures, and for the development of novel lithographic and self-assembly methods for nanostructure fabrication.

Beate Schmittmann
Virginia Tech
Statistical & Nonlinear Physics
For seminal and sustained research on fundamental and applied problems in non-equilibrium statistical physics, in particular driven diffusive systems.

Linda Ellen Sugiyama
Massachusetts Institute of Technology
Plasma Physics
For contributions to the development of numerical simulation for the study of basic questions in plasma physics and the inter-relationship between the numerical and analytical approaches to plasma theory.

Veronica Vaida
University of Colorado
Chemical Physics
For fundamental contributions to the understanding of photodissociation dynamics of excited states and especially in the application of this understanding to processes in the atmosphere.

Nai-Chang Yeh
California Institute of Technology
DCMP (Condensed Matter)
For her contributions to the understanding of cuprate superconductors, vortex dynamics and phase transitions of extreme type-II superconductors, and physical properties of ferromagnetic perovskite oxides.

Yuri Suzuki is 2005 MGM Award Winner

By Sue Otwell, APS Staff

Agnes Pockels

Yuri Suzuki of the University of California, Berkeley is the winner of the 2005 Maria Goeppert-Mayer Award research in epitaxial oxide thin films, nanostructures and devices with tailored magnetic, electronic and optical properties.

Yuri Suzuki received her A.B. degree in physics from Harvard University in 1989 and her Ph.D. in applied physics from Stanford University in 1995. From 1994-1996, she was a Postdoctoral Member of Technical Staff at AT&T Bell Laboratories (later Lucent Technologies Bell Laboratories). She was on the Cornell faculty in Materials Science and Engineering as an Assistant Professor (1997-2001) and later as an Associate Professor (2001-2002). In 2003, she joined the UC Berkeley faculty in Materials Science and Engineering as an Associate Professor.

Suzuki's primary research interests are in the areas of magnetics and photonics. Her projects include studies of the structure-property relationships in novel magnetic oxide systems, magnetism at the nanometer length scale, magnetic tunnel junction devices and photonic bandgap materials.

Among the honors she has received are the Robert Lansing Hardy Award of the TMS, David and Lucile Packard Foundation Fellowship in Science and Engineering, National Science Foundation CAREER Award and Office of Naval Research Young Investigator Award. She was also named Outstanding Educator at Cornell University and Presidential Faculty Fellow at UC Berkeley.

The MGM Award was established in 1985 and is sponsored by the General Electric Foundation (now the GE Fund). The award is given to a woman during the early years of her career, not later than ten years after the granting of the Ph.D. degree for scientific achievements that demonstrate her potential as an outstanding physicist. It is named for Maria Goeppert Mayer, a mathematical physicist, who, with J.H.D Jensen, won the 1963 Nobel Prize in Physics for work on the nuclear shell model.

Information on past winners and on how to nominate a woman for the MGM Award can be found at *http://www.aps.org/praw/mgm/index.cfm*

CSWP Responds to Harvard University President's Comments

By Sue Otwell, APS Staff

CSWP reacted swiftly with a Letter to the Editor of the New York Times in response to statements by Lawrence Summers, President of Harvard University in which he suggested that the shortage of women scientists may stem in part from "innate" differences between men and women. Summers' remarks were made on January 14, 2005 at a meeting of the National Bureau of Economic Research, which had met to discuss the causes of under-representation of women in science. The remarks have been widely reported in the New York Times as well as other news media.

About 50 people attended the conference, which was titled "Diversifying the Science and Engineering Workforce: Women, Underrepresented Minorities and Their S&E Careers." Summers has since issued an apology to the Harvard community which is posted on his website at www.president.harvard.edu .

CSWP's letter, dated January 19, 2005, appears below.

To the Editor of the New York Times:
We were disappointed to learn about the recent comments of Harvard President Summers. Leaders in academia wondering aloud if women may be genetically inferior in math/science skills perpetuate a self-fulfilling prophecy: that we will continue to see few women who are willing to devote their lives to science. While it is tempting to propose a genetic explanation for the under-representation of women, research shows, for example, that identical papers are judged to be of lower quality when the purported author is a woman rather than a man (Paludi and Bauer, 1983). We also know that the representation of female scientists in some countries is significantly higher than in the US, again at odds with a genetic explanation for under-representation. We expect leaders of elite academic institutions to do their research before lending their voices to such unsubstantiated prejudices.

Committee on the Status of Women in Physics, American Physical Society

Aihua Xie, Chair, 2005, Kimberly Budil, Bernice Durand, Patricia Mooney, Margaret Murnane, Peter Sheldon, Marc Sher, Roxanne Springer, Sherry Yennello.

AIP Announces New Report on Women in Physics and Astronomy

By Rachel Ivie, Statistical Research Center, American Institute of Physics

The Statistical Research Center of the American Institute of Physics has a new report available on women in physics and astronomy. "Women in Physics and Astronomy, 2005" updates and expands the SRC's first report on women in physics, which was published in 2000. The report documents the representation of women in physics and astronomy at each academic level, and compares physics and astronomy to other scientific fields. Changes in the representation of women in physics and astronomy are also discussed. Although the representation of women in physics has increased, physics still has one of the lowest rates of participation by women in any scientific field.

The report also discusses the so-called "leaky pipeline" to determine the exact point at which women are leaving physics and astronomy. The leak for physics seems to occur at one point only—between taking high school physics and earning a bachelor's degree in physics. This means that women are represented on physics faculties at about the rate we would expect given degree production in the past. The same is true for astronomy.

The report also lists physics departments that have much higher than average graduation rates for women at both the bachelor's and PhD levels. We also estimate retention rates for male and female graduate students in physics. In addition, there is a list of PhD-granting physics departments that have four or more women among their ranked faculty members. Statistics on salary differences, minority women in physics, and women in physics in other countries are also presented.

"Women in Physics and Astronomy, 2005" is funded by a grant from the Alfred P. Sloan Foundation. The report can be downloaded at *http://www.aip.org/statistics/trends/gendertrends.html*. For a paper copy or for more information, please contact Rachel Ivie at rivie@aip.org or 301-209-3081.

Have you moved? Changed jobs? Changed fields?
Take a moment to update your name/address/qualifications on the Roster of Women in Physics.
This database also serves as the Gazette mailing list. See pages 13-15.

The American Physical Society 2004-2005 Travel Grants for Women Speakers Program

Limited Funding is Available for the 2004-2005 Academic Year! Apply online at www.aps.org/educ/cswp/travelgrant.cfm

Purpose The program is intended to expand the opportunity for physics departments to invite women colloquium/seminar speakers who can serve as role models for women undergraduates, graduate students and faculty. The program also recognizes the scientific accomplishments and contributions of these women physicists.

Grant The program will reimburse U.S. colleges and universities for up to $500 for travel expenses for one of two women colloquium/seminar speakers invited during the 2004-2005 academic year.

Qualifications All physics and/or science departments in the United States are encouraged to apply. Canadian and Mexican colleges and universities are also eligible, provided that the speakers they invite are currently employed by U.S. institutions. Invited women speakers should be physicists or in a closely related field, such as astronomy. Speakers should be currently in the U.S. The APS maintains the Women Speakers List which is available online at (www.aps.org/educ/women-speaker.cfm. However, selection of the speaker need not be limited to this list. Neither of the two speakers may be a faculty member of the host institution.

Guidelines Reimbursement is for travel and lodging expenses only. Honoraria or extraneous expenses at the colloquium itself, such as refreshments, will not be reimbursed.

Application The Travel Grants for Women Speakers Application Form (www.aps.org/educ/cswp/travelgrant.cfm) should be submitted to APS identifying the institution, the names of the two speakers to be invited and the possible dates of their talks. Please note that funds for the program are limited. The Travel Grants for Women Speakers Application Form should be submitted as early as possible, even if speakers and dates are tentative, or if the speakers are scheduled for the spring semester. The application form will be reviewed by APS, and the institutions will be notified of approval or rejection of their application within two weeks. Institutions whose applications have been approved will receive a Travel and Expense Report Form to submit for

See following page for application form.

Women Speakers List

Need a speaker? Consider consulting the American Physical Society Women Speakers List (WSL), an online list of over 300 women physicists who are willing to give colloquium or seminar talks to various audiences. This list serves as a wonderful resource for colleges, universities, and general audiences. It has been especially useful for Colloquium chairs and for those taking advantage of the Travel Grant Program for Women Speakers. To make the WSL easy to use, we have made the online version searchable by state, field of physics, or speakers' last names.

If you'd like to search the list to find a woman speaker, go to http://www.aps.org/educ/women-speaker.cfm

Women physicists who would like to be listed on the Women Speakers List or those who'd like to modify their existing entries can do so at http://www.aps.org/educ/women-speaker-enroll.cfm or see page 15.

APS also has a companion program for minority speakers. Information on the Travel Grant Program for Minority Speakers can be found at http://www.aps.org/educ/com/travelgrant.cfm The Minority Speakers List can be found at www.aps.org/educ/minority-speaker.cfm.

2004-2005 Travel Grants For Women Speakers

♦ Application Form ♦

This form is also available on the Internet at www.aps.org/educ/cswp/women-app.cfm

This form must be filled out and approval received from the APS in order to be eligible for up to $500 travel reimbursement. **Please note that submitting this application form does not guarantee reimbursement.** You will be notified within two weeks of receipt of this application whether or not it has been approved.

DATE: _____

INSTITUTION: _____

DEPARTMENT: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

APPLICATION PREPARED BY (Required): _____

NAME: _____ **TITLE:** _____

PHONE: _____ **FAX:** _____

EMAIL: _____

Please list information on the speakers below. Please indicate if speakers' dates or talk titles are tentative.

DATE OF COLLOQUIUM: _____

SPEAKER'S NAME: _____

HOME INSTITUTION: _____

HOME DEPARTMENT: _____

ADDRESS: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

PHONE: _____ **FAX:** _____ **EMAIL:** _____

TITLE OF TALK: _____

DATE OF COLLOQUIUM: _____

SPEAKER'S NAME: _____

HOME INSTITUTION: _____

HOME DEPARTMENT: _____

ADDRESS: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

PHONE: _____ **FAX:** _____ **EMAIL:** _____

TITLE OF TALK: _____

Please return this form to:

Arlene Modeste Knowles, Travel Grants for Women Speakers Program
American Physical Society
One Physics Ellipse
College Park, MD 20740-3844
Tel: (301)209-3232 • Fax: (301)209-0865 • Email: travelgrant@aps.org

Roster of Women and Minorities in Physics Enrollment Form

The Roster is the basis for statistical reports on women and minority physicists; mailing lists corresponding to announcements, publications of the APS Committee on the Status of Women in Physics (CSWP); and confidential searches. The Roster will not be made available to commercial or political organizations as a mailing list, and all information provided will be kept strictly confidential. Although the Roster is employed to serve women and minority physicists, enrollment is open to anyone interested in issues affecting these groups. Please give a copy of this form to others who might be interested in joining the Roster, or in receiving the newsletters.

Please complete all entries on BOTH SIDES OF THE FORM and indicate changes if this is an update of a previous entry. After completing this form, please return to:

The Roster of Women and Minorities in Physics ◆ American Physical Society ◆ One Physics Ellipse ◆ College Park, MD 20740-3844

Please indicate whether you are interested in receiving:

- ❒ **The *Gazette,* CSWP (women's) newsletter**
- ❒ **Employment Announcements *(women and/or minorities only)***

Is this a modification of an existing entry?:

❒ **yes** ❒ **no** ❒ **not sure**

NAME: _____
(last) (first) (middle)

Previous last name (if applicable): _____ Date of Birth _____/_____/_____

GENDER:
❒ Female
❒ Male

Ethnic Identification

❒ Black ❒ Native American ❒ Caucasian (Non-Hispanic) ❒ Other (please specify)
❒ Hispanic ❒ Asian or Pacific Islander _____

Mailing Label Information (Foreign addresses: Use only the first three lines, abbreviating as necessary.)

In this section, please print information exactly as it is to appear on your mailing label. Where boxes are provided, print one character within each box, abbreviating where necessary.

NAME AND TITLE

ADDRESS Line 1:

ADDRESS Line 2:

ADDRESS Line 3:

CITY/STATE/ZIP

Daytime Phone _ _ _ – _ _ _ – _ _ _ _ Fax: _ _ _ – _ _ _ – _ _ _ _

E-mail Number: _____

Educational Background

Degrees	Year Received (or expected)	Name of Institution
BA or BS	_____	_____
MA or MS	_____	_____
Ph.D.	_____	_____
Other _____	_____	_____

Thesis Title (Highest Degree) (Abbreviate to 56 characters total)

_____

PLEASE REMEMBER TO COMPLETE SIDE II OF THIS FORM

Current Employment Information (28 Characters per line)

Employer: _____

Department/Division: _____

Position/Title: _____

Professional Activity Information

CURRENT WORK STATUS (Check One)

1 ____ Faculty, Non-Tenured
2 ____ Faculty, Tenured
3 ____ Inactive/Unemployed
4 ____ Long-term/Permanent Employee
5 ____ Post Doc./Research Assoc.
6 ____ Retired
7 ____ Self-Employed
8 ____ Student Full Time
9 ____ Student Part Time
10 ___ Teaching/Precollege
11 ___ Other (please explain)

_____
_____

TYPE OF WORKPLACE FOR CURRENT OR LAST WORK

1 ____ College - 2 year
2 ____ College - 4 year
3 ____ Consultant
4 ____ Government
5 ____ Industry
6 ____ National Lab
7 ____ Non-Profit Institution
8 ____ Secondary School
9 ____ University
10 ___ NA
11 ___ Other (Please explain)

_____
_____

TYPE OF WORK ACTIVITY

Please check up to four of the activities in which you engage most frequently.

1 ____ Administration/Management
2 ____ Applied Research
3 ____ Basic Research
4 ____ Committees/Professional Org.
5 ____ Computer Programming
6 ____ Development and/or Design
7 ____ Engineering
8 ____ Manufacturing
9 ____ Proposal Preparation
10 ___ Teaching - Secondary School
11 ___ Teaching - Undergraduate
12 ___ Teaching - Graduate
13 ___ Technical
14 ___ Technical Sales
15 ___ Writing/Editing
16 ___ Other (please specify)

_____
_____

DEGREE TYPE (Highest)

1 ____ Theoretical
2 ____ Experimental
3 ____ Both
4 ____ Other (please explain)

_____
_____

FIELD OF PHYSICS

(check up to 4 in each column)

Current Interest	Highest Degree	
1 ____	1 ____	Accelerator Physics
2 ____	2 ____	Acoustics
3 ____	3 ____	Astronomy & Astrophysics
4 ____	4 ____	Atomic & Molecular Physics
5 ____	5 ____	Biophysics
6 ____	6 ____	Chemical Physics
7 ____	7 ____	Computational Physics
8 ____	8 ____	Computer Science
9 ____	9 ____	Condensed Matter Physics
10 ___	10 ___	Education
11 ___	11 ___	Electromagnetism
12 ___	12 ___	Electronics
13 ___	13 ___	Elementary Particles & Fields
14 ___	14 ___	General Physics
15 ___	15 ___	Geology
16 ___	16 ___	Geophysics
17 ___	17 ___	High Polymer Physics
18 ___	18 ___	Low Temperature Physics
19 ___	19 ___	Materials Science
20 ___	20 ___	Mathematical
21 ___	21 ___	Mechanics
22 ___	22 ___	Medical Physics
23 ___	23 ___	Non-Physics
24 ___	24 ___	Nuclear Physics
25 ___	25 ___	Optics
26 ___	26 ___	Physics of Fluids
27 ___	27 ___	Plasma Physics
28 ___	28 ___	Quantum Electronics
29 ___	29 ___	Solid State Physics
30 ___	30 ___	Space Physics
31 ___	31 ___	Superconductivity
32 ___	32 ___	Surface Science
33 ___	33 ___	Thermal Physics
99 ___	99 ___	Other (please specify)

_____

APS Membership Information

Are you an APS member?:

❒ No Check here if you wish to receive an application - ❒

❒ Yes Please provide your APS membership number, if available, from the top left of an APS mailing label:

___ ___ ___ — ___ ___ ___ ___ ___ ___

Office Use Only

Date of entry: _____

Roster#: _____

Initials _____

Thank you for your participation. The information you have provided will be kept strictly confidential and will be made available only to CSWP and COM members and APS staff liaisons. Please return this form to the address on the reverse side.

Women Speakers List (WSL)
Enrollment/Modification Form 2004-2005

Additions/Modifications may also be made on the Internet at www.aps.org/educ/women-speaker-enroll.cfm
An online copy of the WSL is also available.

The *Women Speakers List* is compiled by The American Physical Society Committee on the Status of Women in Physics (CSWP). The list is updated continuously online. Comments, questions and entries should be addressed to:

Women Speakers List • APS • One Physics Ellipse • College Park, MD 20740-3844 • (301) 209-3232

To enroll or update your current entry, please fill out this form completely and return it to the address above.
Please print clearly or type.

Title/ Name ❒ Dr. ❒ Prof. ❒ Mrs. ❒ Ms. _____ **Date** _____

Institution _____ **Telephone** _____

Address _____ **Fax** _____

_____ **Email** _____

City _____ **State** _____ **ZIP Code** _____

If you have moved out of state, list previous state: _____

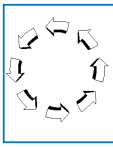
❒ **New Entry** ❒ **Modification**

For which audiences are you willing to speak? (Please check all that apply)
❒ Middle school ❒ High school ❒ General Audiences ❒ Colloquium

To register a new title, give the title as you want it to appear in the left column below. Then check the section(s) where it is to be inserted. To delete a title, indicate the title and check the appropriate box below. A limit of four total entries will be imposed. You may use additional pages if you are submitting more than four modifications. PLEASE TYPE OR PRINT LEGIBLY PAYING PARTICULAR ATTENTION TO FORMULAS. WE REGRET THAT WE ARE UNABLE TO INCLUDE ILLEGIBLE ENTRIES.

TALK TITLE			PHYSICS SUBFIELD (limit 4)		
1.	❒ Add this title	❒ Delete this title	❒ Accelerators ❒ Astrophysics ❒ Atomic/Molecular ❒ Biological/Medical ❒ Chemical ❒ Computational ❒ Condensed Matter ❒ Diversity	❒ Education ❒ Fluid Dynamics ❒ General ❒ Geophysics/ Environmental/Energy ❒ History ❒ Interface/Device ❒ Materials	❒ Nuclear ❒ Optics/Optical ❒ Particle ❒ Physics & Society ❒ Plasma ❒ Polymer ❒ Statisical/Nonlinear ❒ Other
2.	❒ Add this title	❒ Delete this title	❒ Accelerators ❒ Astrophysics ❒ Atomic/Molecular ❒ Biological/Medical ❒ Chemical ❒ Computational ❒ Condensed Matter ❒ Diversity	❒ Education ❒ Fluid Dynamics ❒ General ❒ Geophysics/ Environmental/Energy ❒ History ❒ Interface/Device ❒ Materials	❒ Nuclear ❒ Optics/Optical ❒ Particle ❒ Physics & Society ❒ Plasma ❒ Polymer ❒ Statisical/Nonlinear ❒ Other
3.	❒ Add this title	❒ Delete this title	❒ Accelerators ❒ Astrophysics ❒ Atomic/Molecular ❒ Biological/Medical ❒ Chemical ❒ Computational ❒ Condensed Matter ❒ Diversity	❒ Education ❒ Fluid Dynamics ❒ General ❒ Geophysics/ Environmental/Energy ❒ History ❒ Interface/Device ❒ Materials	❒ Nuclear ❒ Optics/Optical ❒ Particle ❒ Physics & Society ❒ Plasma ❒ Polymer ❒ Statisical/Nonlinear ❒ Other
4.	❒ Add this title	❒ Delete this title	❒ Accelerators ❒ Astrophysics ❒ Atomic/Molecular ❒ Biological/Medical ❒ Chemical ❒ Computational ❒ Condensed Matter ❒ Diversity	❒ Education ❒ Fluid Dynamics ❒ General ❒ Geophysics/ Environmental/Energy ❒ History ❒ Interface/Device ❒ Materials	❒ Nuclear ❒ Optics/Optical ❒ Particle ❒ Physics & Society ❒ Plasma ❒ Polymer ❒ Statisical/Nonlinear ❒ Other

AMERICAN PHYSICAL SOCIETY
Committee on the Status of Women in Physics
One Physics Ellipse
College Park, MD 20740-3844



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