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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:

Dual Career Couples — Problem or Opportunity?

By Marc Sher, College of William & Mary

Marc Sher

Dual-career couple placement, known to most physicists as the "two-body problem," is a major issue in both academic and industrial hiring. It has a particularly disproportionate impact on women in physics. This is partly because the density of positions in physics is low, making it more difficult for a couple to find two jobs in the same general location, and partly because a much higher proportion of women than men are married to scientists. Approximately 68% of married female physicists are married to scientists, whereas only 17% of married male physicists are married to scientists[1], and thus the problem has a disproportionate impact on women.

Eight years ago, Laurie McNeil (then Chair of CSWP) and I did a web-based survey of problems and solutions that dual career couples had experienced. We expected a few dozen responses, with the results to be summarized (perhaps) in a column in *Physics Today*. We were stunned to receive over 630 responses, many of which had very detailed narratives. A 50-page report[2] was written, followed with a full *Physics Today* article[3]. A webpage was also developed[4] in conjunction with this report, but it is now somewhat outdated (although for eight years it has remained the top link when googling "dual careers"). A much better resource is the "Dual Career Couples" website[5] established by geoscientists, which has general resources, several case studies, and links to a number of valuable articles in the *Chronicle of Higher Education*.

In this article, the results of our study are reviewed and updated. Although the original survey report had a chapter on the "problems," giving a large number of horror stories, we will focus here on solutions and suggestions. It will also be noted that institutions are beginning to realize that the "two-body problem" can actually be a "two-body opportunity," and some welcome applications from couples.

Solutions/Suggestions

There is no simple solution to the dual-career couple issue, simply because such couples are in a wide variety of situations. Some couples are at the same stage in their professional careers and are both on the faculty or post-doc market, whereas others are at widely different career stages. Some couples are in the same discipline, while others are in different fields. Some have little flexibility in career goals, while others are more flexible. Although not

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My Career Break

By Elizabeth D. Freeland, School of the Art Institute of Chicago, recipient of the 2007 M. Hildred Blewett Scholarship for Women in Physics

I did not plan to take a "break."

In 1995, I was finishing my PhD in condensed matter theory at Johns Hopkins University. I was marrying a physicist, and we decided that a long-distance relationship would not be good for us. My fiancé finished a few months before I did and accepted a very good post-doc offer at Brookhaven National Lab. I was told to not limit myself geographically, take a post-doc wherever, and that things could "work out" later. I didn't have much faith in that advice. What I saw in the world of physics was divorce, couples split across the country, women physicists with no children and those who had one child later in life. I also saw men with stay-at-home wives, and several children. What I did not see was myself.

I had always seen myself as having a career and I made it clear to my future husband that this would be the case. In hindsight though, it is not so surprising

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Dual Career Couples, continued from page 1

often discussed (and sometimes regarded as a very touchy subject), the couple can have very different ability levels. Note that throughout this article, the word "spouse" is shorthand for "spouse/partner/significant other."

A common scenario occurs when the couple is in the same discipline and at roughly the same stage in their careers. It is unusual for a department to have two faculty positions open in the appropriate subfields. However, in recent years (as evidenced by numerous discussions in the *Chronicle*) Deans and Provosts have begun to recognize the problem and have shown increasing flexibility. One candidate can be hired into the advertised position and the spouse can be given a bridge position (mortgaging a future retirement in the department); or the spouse can be hired into a soft-money research position (sometimes using start-up funds) until the appropriate position becomes available. In larger cities, where there are more opportunities other than the institution, the spouse can be given soft-money funding to bridge the gap until a permanent position is found elsewhere.

An option discussed in the report[2] is a shared/split position, in which a single full time equivalent position (FTE) is shared by the couple (in split positions, each has a 0.5 FTE; in shared positions, they share a 1.0 FTE position). With summer salary for both, and some administrative flexibility (such as 1.2 or 1.5 FTE's), the couple can maintain a salary not too far below two full-time positions. Many find the added flexibility and lighter teaching loads advantageous in dealing with family issues and child care.

When should the applicants mention their spouse? As shown in the survey report, mentioning the spouse at an early stage, such as in the application letter, can result in substantially reduced consideration—some places simply want to avoid the problem, others are actively hostile to being "forced" to consider a spouse. Given the competitiveness of the job market, even slightly reduced consideration can be lethal to one's chances. Quiet inquiries can be made if the applicants know someone at the institution, of course. If the only acceptable option would be two tenure-track faculty positions, it is best to mention it early as many institutions simply can't create another faculty position very quickly. If the couple is willing to commute, there is no need to bring up the spouse until after an offer is made. In the more common situation in which the offer would not be accepted unless the spouse has a job in at least the same city (if not the same institution), it is best not to wait until an offer is made. Most institutions are willing to help with placing a spouse, are no longer surprised by such situations, and can create soft money research positions fairly quickly if needed. A very nice discussion of the best time to bring up the issue can be found in "Solving the Two-Body Problem." [6]

If the couple is at the same stage in their careers, but in different departments, inquiries need to be made earlier. If one department has a position and one of the pair is invited to interview, quiet inquiries can be made to the chair of the other department. Waiting until a faculty offer is made is usually too late—the other department is unlikely to push too hard to make another department happy. Many larger institutions, however, have spousal hiring programs through which special arrangements can be made (usually through the Provost's office) to hire a spouse in another department—see the survey report for details. Accompanying this article is a detailed discussion of the policies at the University of Wisconsin for accommodating dual career couples.

Often the couple is at different stages in their careers, and only one is a serious candidate for a faculty position. Since men, on average, are older than their spouses (3 years in our survey was the average), women are more often the "trailing spouse." Here, the strategy depends on whether the trailing spouse really wants an academic position. If not, the institution can provide some soft money support for a year or two while the trailing spouse looks for a permanent position. But if the trailing spouse wants an academic position, many institutions will be willing to fund a short term (2-3 year) postdoctoral position. Of course, that is only a stop-gap. If the trailing spouse does good research, volunteers to teach a class and does well, then the institution will have to find either a faculty position or a long-term soft money position, or risk losing the original hire as well. Many couples in our survey found long-term or faculty positions in this manner.

Finally, if two positions in the same area can't be found, there is commuting. With summers, academic breaks, and staggered sabbaticals, faculty couples can be together for 75% of the time. This is, of course, not an attractive scenario if there are children, but for some, it can be a way for both to have fulfilling academic careers.

The most important thing for couples to do is discuss the situation and possible scenarios before applying. Would you be willing to live apart, and if so, how far? Would one of you be willing to accept a relatively inferior position in order to live together, and would this cause later resentment? These discussions need to take place before applications go out, rather than leaving everything up to chance and having to deal with the issues later.

Much of the above was discussed in our survey report. What has changed in the past seven years? The problems persist, of course, but college and university administrators seem much more aware of dual career couples than before. It is expected to be a significant factor in many hires, and institutions are being much more pro-active. In fact, many institutions have begun to view the dual career couple issue as more of an opportunity than a problem.

The Two-Body Opportunity

There are several ways in which the two-body problem can be considered an opportunity. A typical search for a faculty position may generate a couple of hundred applications or more. The best of the applicants will likely get several offers. For the vast majority of research universities (namely, all of those that are not among the top ten or twenty elite institutions), it can be difficult to compete with the elite institutions that have much greater prestige and resources. Here, the two-body issue can be a golden opportunity, by providing an institution with a substantial competitive edge over more prestigious places. Many applicants will happily go to an institution with somewhat less prestige and fewer resources, if their spouse can also be placed into a fulfilling position. One can even lure professors away from top-ranked institutions by assisting with a spousal situation.

A two-body situation can also lead to greater faculty

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Dual Career Couples: What One University Does to Help

By Laurie Mayberry, Assistant to the Provost, University of Wisconsin-Madison

The University of Wisconsin-Madison was a pioneer in recognizing and establishing programs to assist spouses/partners of new faculty hires with employment opportunities. However, our early attempts in the 1980s were met with challenges in implementation. There was concern of nepotism when attempting to place partners in positions and often a phobia in some areas of campus that by assisting the spouses/partners, we were holding too many hands or not doing the right thing. Often there was a feeling that people should be able to find jobs on their own.

"There has been a dramatic turnaround in how we think about and approach placement of faculty since the University began working with dual career couples in the early 1980s," said Vice Provost Laurie Beth Clark. "Today we better understand the issues of dual career couples and the importance of the partners finding meaningful positions," she said. "Quite simply in order to attract the top faculty, we often need to work with two very talented professionals in finding employment that is both in their field of interest and meaningful."

There are many challenges in placing faculty and non-faculty partners in positions on and off campus said Clark. When making a campus placement, the main role of central administration is to help people connect with units and departments, explore a variety of employment opportunities, and negotiate issues such as short-term financial barriers to employment she said.

Today, two UW-Madison programs exist to assist dual career couples. The Faculty Strategic Hiring Initiative focuses on the placement of the partners of faculty members into tenure- track faculty positions, and the Dual Career Couple Assistance Program provides support for partners seeking other types of employment. The Provost's Office provides limited funds during the initial years for high-priority faculty hires. Generally, funding is requested for one to three years with the cost split equally between the faculty member's home department, the spouse/partner's hiring unit, and the strategic hire funds in the Provost's Office. This is short-term bridge funding that allows a department or program to hire a tenure-track faculty member and bridges the time when long-term funding becomes available, such as from an anticipated retirement.

For non-faculty positions, we offer general placement assistance, information and referrals for employment on campus, and connections to off-campus positions. We work with partners to explore on-campus options (academic staff, classified staff, or post-doctoral positions) and off-campus employment options through an external employment agency.

Recently, UW-Madison has taken a more active role in working with dual career couple partners through the Dual Career Couple Assistance in the Provost's Office. To assist partners in finding off-campus positions, a professional staff member in the Provost's Office is available to meet with partners to discuss career needs and goals, offer suggestions and information on networking, provide resume review, and provide links to job postings both on and off campus. The staff member is available to answer questions regarding the UW-Madison and Madison area community. If the partner has family considerations or specific needs, then corresponding Madison resources are provided. Career placement offices on the Madison campus are often excellent resources for partners and some offer services to partners.

To assist partners with placement in the private sector, UW-Madison has a limited contractual agreement with an outside employment agency to work with partners on job networking, advising and placement. The advantage of this arrangement is that partners are able to connect with an established company's employment expertise, contacts, and additional services without the institution incurring the expense and time necessary to establish comparable services. While the arrangement has been very good as a networking and advising agent, the level of actual job placement has been low. We find that most of the partners find jobs on their own.

In the past year, the Dual Career Couple Assistance Program has provided assistance to 18 dual career couples (14 new hires and 4 retention cases). Two spouses/partners were offered tenure-track faculty positions with strategic hiring initiative funding, four were offered academic staff or classified positions with strategic hiring initiative funding, two found campus employment through department connections, and two found positions on their own. The remaining partners are still looking for employment.

Over the years, departments have worked quietly behind the scenes to place partners. Central administration often doesn't hear how much the campus community is doing to place partners of faculty. In reviewing the data from the Office of Human Resources, we know that 62 position waivers (which are required to hire someone without a formal search) have been initiated for spouses/partners in the last two years. Only a few of these individuals have come to the attention of central administration as requests for strategic hire funding or general placement assistance.

This summer a telephone survey regarding spousal/partner hiring concerns was conducted of all the new faculty hires for 2005-2006. Approximately half of the faculty (54 of 103) agreed to be interviewed. The majority of those interviewed did not have spousal hiring concerns and, of those who did, only five have spouses/partners who have hiring needs that are unmet. Also, we learned that many spouses/partners prefer to wait to find positions until after they arrive in Madison and have had time to settle into the community. Thus, the needs of partners are ongoing and not necessarily concentrated at the point of the initial tenure-track faculty hire.

The process of working with dual career couples is complicated, according to Clark. "We understand better as a (university) community what we need to do than we did in the early 1980s. What we all need to keep in mind is that an important part of a happy and healthy university community is strengthened by the quality of the individual household which means providing the widest possible support that we can," said Clark.

In the past year, the Dual Career Couple Assistance Program has provided assistance to 18 dual career couples (14 new hires and 4 retention cases).

Leveling the Playing Field: What You Can Do, Part II

By Roxanne Springer, Duke University

(The first part of this article appeared as the Guest Editorial in the Spring 2006 issue of the Gazette.)

The very best thing you can do is complain early.

Learning-Inhibiting Behaviors

I will use the phrase "learning-inhibiting behavior" (LIB) to describe any act, however mild, which interferes with the learning/working/teaching environment. There will be reasonable disagreement over exactly what acts this encompasses. For instance, there are legitimate teaching techniques that work for some and do not work for others. Even though some students may not respond positively to, for instance, a group learning environment, I do not count that as a LIB on the part of the instructor using that technique. LIBs refer to those disruptive practices and behaviors which are unnecessary to the learning of physics, and which often single out a particular subgroup of people. Any student, faculty, staff, or administrator who experiences, observes, or is informed about the possibility of LIBs in their vicinity or under their purview should take steps to stop them. Giving feedback about LIBs can be daunting. It may help to consider how you would proceed were you to witness an instructor mumbling into the chalkboard so that students were unable to hear the lecture. The barrier to giving feedback about this sort of action does not seem so difficult, and many of the arguments for behavior change are the same.

Examples of LIBs on the part of lecturers in the presence of students may include:

- Helping women more or less than men.
- Calling on men in class more or less than women.
- Butt, cleavage, or crotch staring.
- Delaying the start of class for the arrival of a select group of people.
- Excessive attention to or consistent neglect of minority students.
- Head-patting, shoulder squeezing, hugging, etc.
- Condescending attitude towards anyone.
- Letting students behave disrespectfully towards each other.

Examples of LIBs on the part of students may include:

- Ignoring or belittling the contribution of colleagues.
- Being disrespectful to classmates or the instructor.

Harassment

Harassment is such a loaded word that I wish I could think of one that is less incendiary. In the "harassing behaviors" category sits a rather large list of actions, from low-level annoyances perpetrated by people who are basically good but severely socially challenged to those trying to trade sex for the lab equipment you need to do your work. Fortunately, most harassment falls towards the low-level part of the spectrum. Unfortunately, it can happen pretty much anytime and anywhere. But we do not have to tolerate it. All we need is a critical mass of people willing to stand up for themselves and insist on a respectful work environment.

The first reaction of many students and junior faculty when faced with harassment and/or discrimination is to avoid objecting for fear of reprisals. Students fear poor grades, bad letters of recommendation, etc. Junior faculty fear a negative tenure decision, negative ramification to careers, etc. All these are definite dangers. But consider this. If, for example, you are an untenured faculty member being harassed, and if by complaining your tenure possibility is put in jeopardy, the very best thing you can do is complain early. The situation where complaining would make things worse for you is identical to the situation where you will not be judged fairly on your own merits. Hence you have no reason to believe that even the strongest tenure portfolio will be judged favorably. A university which holds complaining about harassment against you is a university in violation of federal statutes. If you do not get tenure, it may be difficult to get a complaint of harassment taken seriously after the fact as there will be the added hurdle of demonstrating that the complaint is not motivated by your rejection. Complaining early not only gives you a chance to create the environment you deserve and which the university is obligated to provide for you, but whistleblower laws protect you from retaliation.

Some universities do not provide much assistance to students and junior faculty faced with harassment. But keeping your experience a secret is what your harasser is counting upon so that he/she can continue harassing for years to come. You are unlikely to be his/her first victim, but you can be the last. The best protection is to speak up early and often. The more people you tell, the more likely you are to find one who will help you. Those who will not help you become part of the problem themselves, legally as well as morally.

So to whom do you turn? First, talk to someone you trust. If the situation involves assault (and remember that by definition assault need only involve the threat of physical contact and does not require contact itself) I recommend calling the police. Calling the police will afford you levels of protection that many universities do not offer. It is not as dramatic as it sounds. Or maybe I should say that assault is worthy of whatever drama is involved. I have heard countless women regret that they did not call the police when the situation warranted it, and nobody has regretted calling the police when they did. Sometimes this is because the police are more objective; they are less worried about protecting tenured faculty members or the school's reputation at your expense. Many universities have offices charged with ensuring compliance with various equity laws and policies. I do not recommend relying on them. Their priority is to keep the university from being sued, and the best way for them to do that is to hide the problem. Students and junior faculty are a lot easier to hide than tenured professors, so guess who gets sacrificed. Note the inherent conflict of interest in asking a university to investigate itself, which is what the compliance offices claim to do. If the alleged harasser is a senior faculty member, in whom the university has presumably many years invested, the administration may be tempted to support that senior faculty member over the more "disposable" members of their community. And the people in

the compliance office are hired and fired by these same administrators.

Instead, look for an office which is staffed by trained professionals (but not just lawyers) who will act as advocates for you. Find out if there is a designated person, such as an ombudsperson, who can act as your advocate. That person should know (or be able to find out) how to proceed. If you do not find such a person (or find that person unhelpful), go to the nearest common supervisor that you share with the person who is bothering you. If that supervisor does not help, continue up the chain of command until you find someone who will help. If you know a faculty member you can trust, turn to him/her for advice on how to navigate your organization's system. If you are a student, there may be student advocates on campus who can provide support. If you are a junior faculty member, depending upon the circumstances you may first want to talk to a faculty member you trust who is outside your own department.

What should leaders do when a complaint of harassment is brought to them? Typically, those who behave inappropriately towards one or more people do not behave inappropriately towards everyone in their community, in particular their own leaders. For this reason, it is easy for leaders to have no inkling that one member of their community is behaving in this way towards others. Leaders should remember that just because they themselves (and maybe all of their closest friends) are treated well by a particular person has no bearing on problems that person may be creating for others. It is a leader's job to create and maintain an appropriate climate for everyone over whom they have responsibility. A leader may be tempted to ignore actions and/or words which are considered to be ambiguous. But it is exactly when interactions between humans are ambiguous that a conversation is most needed.

When faced with the suspected (or known) presence of sexual harassment, some universities are overwhelmed by a desire to protect the harassers (or "the school's reputation") rather than a desire to protect the community — and indeed its most vulnerable members — from abuse. Fortunately, this never works indefinitely. The problem will see the light of day, first by word of mouth, then in newspapers, in lawsuits, etc. So let us openly address our problems now, creating conditions for the next generation of physicists that are more inclusive than our own.

If you need help, CSWP members are here for you.

If you need help, the CSWP members are here for you.

RPS acknowledges professors T.J. Allen, Naomi Quinn, and Ronen Plesser for helpful comments and suggestions. The complete text of this article can be found at http://www.phy.duke.edu/~rps/cswpS06.html

ASK THE PHYSICS MENTOR

On several recent interviews for faculty positions, I was asked what my husband did, how many children I have, and other similar questions. It is my understanding that such questions are illegal. How should I respond?

Answer: This is a common problem. Although it is absolutely illegal to ask a candidate about their marital status, children, etc., many women report that such questions are asked in a majority of interviews. In some cases, these questions are asked to determine if there might be a "problem" with the hire, and the interviewer will give substantially less consideration to an applicant with "family issues." That is why the questions are illegal.

One shouldn't immediately assume the worst of such questions. It is natural, during small talk at dinner, for such questions to arise, and the questioner might simply not be thinking about the issue. Some might honestly want to help with any dual career issues. But it is hard to know the motivation of such questions.

When such a question is asked, one can "get legal", refuse to answer and chastise the questioner. But in that case, if it was simply a casual question, it will likely backfire and poison the relationship. Alternatively, one can try to deflect the question, answering in a minimal way, and change the subject, perhaps by saying it isn't relevant for the position. Or else one can respond with a question "why do you want to know that?" Many women answer the question and hope it doesn't hurt their chances.

After the search is over, an unsuccessful candidate who's been asked the question can inform the affirmative action office, confidentially giving the details. Most affirmative action officers will know the history of the department and the individual, and will be able to best advise what action to take. In most cases, a warning to the individual will stop this from happening again.

Do you have a question for the Physics Mentor? Send it to women@aps.org. A member of the Committee on the Status of Women in Physics will offer suggestions in the next issue of the Gazette. No name or other identifying feature will be attached to your question.

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 13–14.**

Cecilia Payne-Gaposchkin: A Stellar Pioneer

By Katherine Gaposchkin Haramundanis

Dorrit Hoffleit Lecture, given at the Meeting of the American Physical Society, Dallas, Texas, April 23, 2006

Cecilia Payne-Gaposchkin

In a world of Newtonian mechanics and Darwinian evolution, we also have Paynian composition of the stars and universe. While Payne, later Payne-Gaposchkin, did not extend her data and conclusions to the universe, her 1925 monograph, described by Otto Struve as "the most brilliant PhD thesis ever written in astronomy," is a pioneering landmark that for the first time combined astronomical observations of stellar spectra with the then new atomic theories of Bohr and Saha. Her conclusions were suppressed by her advisor, H.N. Russell, but she wisely published her data with a disclaimer. Though facing overt gender discrimination throughout her career, and suffering the "pink paycheck" so well known to many women, she persevered and, towards the end of her working lifetime at Harvard University, became Chairman of the Department of Astronomy, a department she had helped to establish with the exuberant director Harlow Shapley in the 1920s and 1930s. One colleague, who called her "An Astronomer's Astronomer," admired her as a person of great kindness, graciousness, humor and humility, who conveyed her love for the science "lucidly and enthusiastically." She never lost her love and enthusiasm for astronomy and astrophysics and made innumerable contributions to these sciences. Her work continues to inspire and provoke those working in the field, and she remains a model for all scientists to follow.

She had many firsts in her scientific career: the first woman to ask her own questions and to answer some of those questions; discovered that hydrogen is the main constituent in the stars; demonstrated that all stars have roughly the same composition; observed the Stark Effect in stars in 1925 (but this publication, like that of her discovery of the importance of hydrogen was suppressed, as Shapley and Russell would not permit her to publish it). She was the first PhD in astronomy from Harvard College Observatory, and was instrumental in running the department and educating its students over the next decades. She was the first to receive the Annie Cannon Prize and the first woman to receive the Russell Prize of the American Astronomical Society. She continued to ask new astronomical questions throughout her life. She received several awards and honorary degrees, including the Rittenhouse Medal of the Franklin Institute, Philadelphia. Her publications spanned astrophysics, spectroscopy, variable stars, photometry, and the history of astronomy, and included numerous book reviews and obituaries of astronomers. The annual Cecilia Payne-Gaposchkin Distinguished Lecture has been established in her honor at the Harvard-Smithsonian Center for Astrophysics.

Eldest of the three children of Edward Payne, Oxford don, and Emma Pertz Payne, artist, Cecilia is a good example of the fulfillment of the Five Suns of Development as articulated by Jane Piirto[1]: genes, gender, family and community, school, and chance. Her mother, widowed when Cecilia was four, brought up her children "by a miracle of courage and self-sacrifice." Among her role models were a botanist great aunt, Dora Pertz, who worked at the Darwin Laboratory at Cambridge, and a professional pianist aunt, Florence Pertz. Dora had been an early graduate of Newnham College at Cambridge University; Cecilia Payne may be its most distinguished graduate. There is something to be said for an institution that can produce a Cecilia Payne and a Rosalind Franklin, whose x-ray photographs were instrumental in the discovery of the DNA double helix.

Cecilia's schooling included the Wendover, Bucks, Grammar School, and, in London after the age of 12, St. Mary's School or College and St. Paul's School for Girls. She paid tribute to the teachers of these schools in her autobiography, dedicating it to them; she considered the last two to be scientists. She spent four years at Newnham College where her professors from Cambridge University were Alfred Fowler, E.A. Milne, and A. Eddington. She entered Newnham in a program of botany and chemistry but soon switched to astronomy, inspired by a public lecture given by Eddington.

Understanding that there were better opportunities for a research program in the United States, she obtained a scholarship and graduate stipend to study under Harlow Shapley at Harvard University, Cambridge, Mass. A look at her log books from the photographic plate stacks shows a person who hit the ground running as she searched the cumbersome and voluminous archive for plates suitable for the program of study she had set for herself. The logs, often written in pen, sometimes containing diagrams for preliminary analysis, show a systematic and comprehensive search for the data of interest. Early logs in her handwriting, and with her name on the flyleaf, give way after two or three years to evidence that she organized the work of many students and assistants. Some logs can be identified as referring to plates likely used in her thesis as they contain notes on stars she included.

Her doctoral thesis was her first book and the first monograph from the Harvard Observatory. After receiving her degree, she obtained a position at the Observatory, and helped to teach the many students who came after her. Of the next four graduates of this program, three were women.

Over the next decade she continued to teach and do research, and in 1933 traveled to Europe, where, at a meeting of the Astronomisches Gesellschaft, she met Sergei Gaposchkin, a Russian astronomer trained in Germany, who had lost his position due to the rise of Hitler. She was instrumental in bringing him to the United States; they were married in 1934. They had a long and fruitful collaboration. She continued to publish, teach, and do research, though her research output was slowed during the period when she became Chairman of the Department of Astronomy in the 1950s; at about this time she also received the DSc from Cambridge University. Of her many books, The Galactic Novae was her most cited work [Trimble], Stars in the Making, her most popular, and Stars and Clusters her last, dedicated to her husband, "That bright, particular star."

The following figure shows the track of her publications and life events. Papers are diamonds, books are squares, and triangles are life events (marriage, birth of her three children, World War II (four highest triangles),

Cecilia Payne-Gaposchkin, continued from page 6

and retirement from Harvard University. Retirement clearly had no effect on her publications.

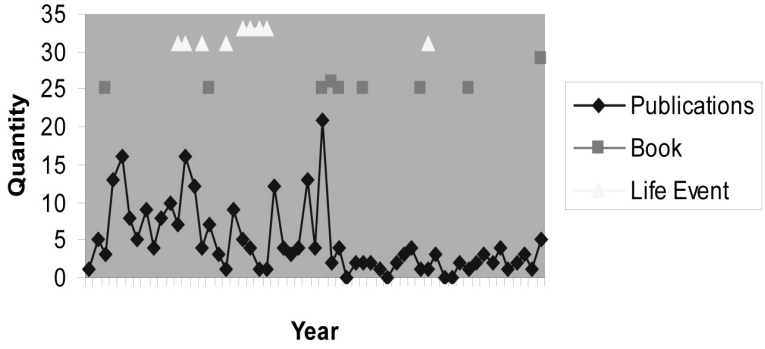
What did others say about her? (on her autobiography):

"…a chronicle of affirmation and hope, a near-poetic witness to a burst of profound discovery insufficiently recognized" [P. Morrison]; "…a life of unusual achievement" [Wayman]; "…one of the truly great astronomers of the Twentieth Century" [W.Morgan]; "One of the greatest astronomers of the first half of this century…" [Goldsmith]; "Meteoric brilliance of the life track of this genius of an English girl… excelling in pioneering astronomical research." [Öpik].

What did she say? "How Not to Do Research: divide and conquer"

"…reward [for a scientific career is] the widening of the horizon as you climb. And if you achieve that reward you will ask no other."

The photo accompanying this article shows her with "the vision splendid" look on her face, in the vein of "nature never did betray the heart that loved her," a concept that endured throughout her scientific work.



[1] *J. Piirto, "Why Are There So Few?* (Creative Women: Visual Artists, Mathematicians, Scientists, Musicians)*." Roeper Review, 13(3), 142-147, 1991; also at http://personal.ashland.edu/~jpiirto/why_are_there_so_few.htm*

Other references are to obituaries or the CPG autobiography: Haramundanis*, K., ed., Cecilia Payne-Gaposchkin, An Autobiography and Other Recollections, Cambridge University Press, 1996.*

D. Hoffleit, "A Study of Meteor Light Curves," Proc. Nat. Acad. Sci. *19, 212, Harvard Reprint No. 88, 1933.*

Dorrit Hoffleit: Meticulous, Indefatigable, Prolific Astronomer

Hoffleit began her astronomical career in 1929 at Harvard University where she was employed to work on photographic variables and spectral classification. She took courses part time to obtain her M.A., which she received in 1932. By 1938, with the strong encouragement of Harlow Shapley and Bart Bok, she had received her PhD in astronomy from Radcliffe College; she continued to work at the Harvard College Observatory until 1956, at which time she became Director of the Maria Mitchell Observatory on Nantucket Island, Mass. and obtained a position in the Department of Astronomy at Yale University, splitting her time between the two institutions. In her own view, her most original work was her early paper on light curves of meteor trails [Hoffleit 1933], but her most well-known publications include the several editions of the Yale *Bright Star Catalogue*, *The General Catalogue of Trigonometrical Parallaxes*, and several of the Yale Zone Catalogues of *Positions and Proper Motions*. With a strong interest in variable stars, she has worked closely with the AAVSO over many decades, publishing many articles on variable stars. Additionally she has written several historical works on astronomy, including W*omen in the History of Variable Star Astronomy*, *Astronomy at Yale, 1701-1968*, and *The Education of American Women Astronomers Before 1960*. With an extraordinary record of astronomical publications over six decades, she is an example of a scientist with a love for astronomy and the skill and patience to bring long-term plans to fruition. She received the Annenberg and George Van Biesbroeck Prizes of the American Astronomical Society and the Nantucket Maria Mitchell Association Women in Science Award, and is a member of the Connecticut Women's Hall of Fame. This lecture is named in her honor for her many and significant achievements.

My Career Break, continued from page 1

Elizabeth D. Freeland

that I put my family first and followed my fiancé to Brookhaven. Neither of us anticipated how destructive that would be to my career. I found it impossible to find any jobs in my field and when my husband received a permanent job offer in Chicago, we couldn't leave Long Island fast enough.

In Chicago, I took up the traditional path of the trailing spouse and found a part-time job teaching physics. I was five months pregnant when I taught my first class. I didn't tell anyone at work and, being part-time, I managed to avoid contact with my colleagues. In mid-October, twelve weeks early, I went into labor. The labor was stalled in the hospital, and I spent the next nine weeks on bedrest. My school handled it all very well, renewed my contract the next semester, and I have considered it "family friendly" ever since.

When my son was about six months old, I began to look for research opportunities. It seemed reasonable to me that if I found collaborators and a good science project then surely I would be able to find funding for summer research. A year later, I had found a theorist at Fermilab with a possible project, and was scheduled to meet with him. I was elated and terrified.

When you stop doing research you become nonexistent very fast. Add a teaching job and a baby, and everyone is quite sure what you intentions are, where you will end up – and it's not doing research. Our society expects stay-at-home-moms to stay at home, or at least not to take up a serious career. Everyone underestimated me, and after a few years of this and several letters addressed to "Dr. and Mrs.", I began to underestimate myself.

By the time I met Dr. Andreas Kronfeld at Fermilab, I was thrilled that anyone would talk to me and terrified that, somehow, I really didn't belong in physics. I kept my fears to myself. Later, I found out that Dr. Kronfeld didn't really think that someone like me would want to do lattice calculations. Thankfully, he kept that to himself.

I began to teach myself high-energy physics and to visit Fermilab when I could. This continued for the next couple of years through the discovery that our son had multiple severe food allergies, an event that pushed our life into the twilight zone. It continued through a second pregnancy which, again, ground my activities to a near halt. This was an incredibly difficult time for me and took more patience than I felt I had. Here was a wonderful opportunity to do research, yet everything seemed to conspire against finding time for physics. I was sure that I would eventually be seen as "not serious" and was constantly afraid that the whole situation would fall apart. I had many serious responsibilities to my children, however, and physics had to wait.

Several people got me through those years, but two stand out. One was Dr. Kronfeld. The most helpful thing he did was to simply talk to me as a fellow physicist and never question my commitment. Whenever I found time to get to Fermilab, he found time to discuss physics. The other person was Dr. Maria Klawe, an academic and a woman scientist. I met her at a wonderful NSF Advance workshop[1], where I learned a great deal about how to navigate academia and ways to balance work and family. Dr. Klawe helped me stay focused, gave me advice and gave me a connection with the rest of the world. The day I broke down crying because my first nanny had quit after only six weeks, at a point when my life seemed to be finally coming under control, Dr. Klawe was able to empathize with this "disaster." Sometimes that is all that one needs.

Throughout this time I looked for research funding. But without full-time institutional affiliation there was only one grant available — a post-doc fellowship from the American Association of University Women (AAUW). By 2004, I was ready to apply for it. I put everything I had into that application. It was my one chance to have time for research. The Blewett Scholarship was first announced shortly before I was notified that I had received the AAUW fellowship.

For the past year, I have been working full-time, primarily on research with the Fermilab Lattice Collaboration. In July, I gave my first post-break conference talk, at the International Symposium on Lattice Field Theory. I was nervous as it was my first talk in front of experts. I was also very excited, and once I got through my first (memorized) sentence I felt at home and enjoyed myself.

This year I will be doing research thanks to the Blewett funding. The year is important for me because it is the last year that I will need full-time daycare. As with anyone, there are no guarantees about my future, and there is still the "two-body" problem. I have no doubt though, that my skills as researcher will grow and that I will eventually find a permanent position. Knowing that everything isn't going come crashing down for want of a nanny though — that is a great relief.

[1] *The NSF Advance workshop "Forward to Professorship" is excellent, and will be held again in Spring 2007. Updated information will be posted on their website: www.seas.gwu.edu/~forward/advance.*

Information on the M. Hildred Blewett Scholarship for Women in Physics can be found at http://www.aps.org/educ/cswp/blewett/index.cfm

Dual Career Couples, continued from page 2

stability. Most institutions have experienced the difficult situation in which faculty leave for another institution. With start-up costs for new faculty members in some fields approaching a million dollars, it can be disastrous for an institution when a faculty member leaves. Yet a couple is much more likely to be stable, simply because it is unlikely that they will both receive offers from elsewhere. Dual career couples have often been very stressed out by their situation, and they are so relieved to get jobs together that they are much more satisfied with their job situation than others. Thus the early investment in finding a position for a spouse will pay off in general satisfaction and productivity, and will substantially increase retention of top-notch faculty.

In addition, a faculty couple can provide excellent role models for undergraduate and graduate students. So many young students, especially women, are aware of the dual career situation and the scarcity of jobs, and seeing a successful couple both doing physics in a nurturing environment can be extremely encouraging. It is an existence proof that the situation can be resolved.

Institutions are now beginning to respond proactively to the dual career program. For example, an ADVANCE Work-Life Committee at the University of Rhode Island has proposed detailed guidelines[7] for Dual Career Assistance. The University of Wisconsin is a national leader in working with dual career couples, and a detailed description of their program accompanies this article. Many other institutions are becoming more active in seeking out positions for spouses, and most are more aware of the advantages of hiring dual career couples.

Conclusions

In any discipline in which the density of positions is low, dual career couples will have difficulties finding jobs in the same area. In a male-dominated profession, these difficulties will disproportionately affect women. In recent years, college and universities have begun to recognize the "two-body opportunity". By considering the two-body problem as a two-body opportunity, institutions can get top-notch faculty, who are happy, productive and likely to stay, and who provide an excellent role model for undergraduates.

References

1 *Pamela Hawkins Blondin, Amanda Benedict and Raymond Chu, APS Membership Survey (AIP, New York, NY), 1990.*

2 *"Report on the Dual-Career-Couple Survey", Laurie McNeil & Marc Sher, http://physics.wm.edu/~sher/survey.html*

3 *Laurie McNeil and Marc Sher, "The Dual Career Couple Problem"* Physics Today*, Vol. 52, 32-39 (July 1999).*

4 *"Dual-Science-Career Couples", Laurie McNeil and Marc Sher http://physics.wm.edu/dualcareer.html*

5 *"Dual Career Couples," http://serc.carleton.edu/NAGT-Workshops/careerprep/jobsearch/dualcareer.html,*

6 *"Solving the Two-Body Problem," Anurag Agrawal, Jennifer Thaler,* Science Magazine*, March 7, 2003 http://physics.wm.edu/~sher/at.html*

7 *URI ADVANCE Work-Life Committee, 2006, http://ww2.wdg.uri.edu:81/testsite/index.php?id=912*

Professional Skills Development Workshops To Be Offered for Women in Industry and Labs

By Sue Otwell, APS Staff

Following successful workshops for women faculty in 2005 and 2006, APS will offer similar workshops on Sunday, March 4, 2007 in Denver and Friday, April 13 in Jacksonville. These workshops will be aimed at women physicists in industry and government labs. The workshops will be limited in size to maximize interaction with the facilitators and among the participants. Participants will be eligible to receive a stipend towards hotel and travel expenses. Lunch will be provided and a networking reception will follow the workshops. Details will be posted on the CSWP's website at www.aps.org/educ/cswp/skills/ .

The tenure track and newly tenured women faculty who participated in the two Professional Skills Workshops offered by APS in March (Baltimore) and April (Dallas) were enthusiastic in their praise:

"The workshop had a huge impact on my professional life, and I just wish more women physicists could have the opportunity to participate in such a workshop," said one attendee.

"I can't count the number of meetings I've attended in 15 years. This is the only one where I was 100% engaged from the very first minute to the very last minute. This has been life-changing. That is not an exaggeration," commented another.

The workshops combine theater training, leadership training and career development in an interactive format designed to enhance women's abilities and confidence in challenging situations. The goal is to enable women physicists develop persuasive communication, negotiation and leadership skills and to become more effective whether leading a meeting or participating in a discussion.

Under the guidance of professional facilitators Lee Warren and Nancy Houfek (Harvard), Barbara Butterfield (University of Michigan) and Jane Tucker (Duke), discuss case studies and role-played situations that include negotiating job offers, and dealing with difficult individuals. In many cases, the participants themselves suggest the scenarios. With the facilitators' expert coaching, they practice various approaches to various challenging situations and learn to recognize their own particular negotiating style — and how to improve it.

The series of workshops for women physicists has been made possible by a grant from the National Science Foundation. Organizers are Judy Franz, Executive Director of the American Physical Society, and Aihua Xie, CSWP Chair 2005, of Oklahoma State University. Members of the Committee on the Status of Women in Physics provide suggestions and advice.

"The workshop had a huge impact on my professional life."

Book Review: "A Hand Up: Women Mentoring Women"

by J. Tinka Gammel, Los Alamos National Laboratory

Mentoring can play a key role in helping women overcome these challenges, while we all strive to promote greater attitudes of fairness and gender-blind appreciation of excellence.

My general impression upon reading this book was, "I should join AWIS as they do great stuff!" This book is well worth reading, both for an experienced mentor as well as for a young person looking for guidance.

The 1993 edition of *A Hand Up* contained many useful articles as a 'paper mentor' for women in science as well as many personal interviews with women mentors and students with a summary article by Deborah Fort. I wish I had read it when it came out, as there are many gems of wisdom I have since learned the hard way. In the new edition, most of the articles and interviews are new or updated. There are some outstanding articles by women who are in the forefront of the thinking about how to make science more hospitable to women; several of these women are pioneers in scientific fields as well.

Particularly notable are articles by Sheila Tobias, Sue Rosser, Linda Wilson, and Florence Haseltine. Ms. Tobias, a long-time feminist and advocate for women in science, writes about the need to openly challenge prevailing norms in education and employment so that science can change to accommodate women and their different styles, priorities, and life choices. In the process, science will becoming more welcoming to all practitioners.

Dr. Sue Rosser, an extremely well-respected researcher on issues pertaining to women in science, provides a statistical summary of these issues and how they affect women's careers. Her data shows that these issues have changed little over the past decade and that striving for work/family balance continues to exert enormous pressure on female scientists. Until widespread and workable solutions to these problems are found, women will continue to be underrepresented and marginalized in scientific fields.

Dr. Linda Wilson (with Dr. Hilary Clark) writes about the damaging effects of both blatant and less overt discrimination on women. Dr. Wilson, a past president of Radcliffe College, describes the effects on women's self-confidence and on their view of science as a place where they belong. Mentoring can play a key role in helping women overcome these challenges, while we all strive to promote greater attitudes of fairness and gender-blind appreciation of excellence.

Dr. Florence Haseltine is an ardent champion of both women as scientists and women as medical consumers. Dr. Haseltine, with both PhD and MD degrees, often gives lectures where she reminds her audience that when she first began working in the area of women's health, the National Institutes of Health had more veterinarians on staff than experts on women's health and routinely extrapolated the results of disease studies on men to women by simply making a correction for average body weight. Dr. Haseltine soon changed all that and went on to focus on the struggles of women in science. As a mentor herself and as a researcher on the importance of mentoring, Dr. Haseltine is a wonderful role model of all of us.

That said, I found after reading the first few interviews that they were saying many of the same things, and skipped to the summary of the interviews (The Consensus), going back to read the interviews later. I was frustrated that quotes in the summary were given as "one science educator cautions" (etc.) without the specific reference, making it difficult to follow up on an interesting quote by reading the interview in detail. I also thought that this section would have been more useful if it had been less of an impartial summary and more of a guide to the interviews and a lead in to the section on advice.

I also felt frustrated that the interviews seemed to just skim the surface of these women's experience. For instance, I first got to know Vera Rubin as the mother of a friend when I was a child. I still recall her telling of having to resolve the issue of there being no women's restroom at the observatory before she was allowed to use the telescope (if I remember correctly, they finally agreed it was OK to have a sign one could flip - women on one side, men on the other). For me, this story has always underscored the barriers the previous generation removed for my generation, and (as Vera tells it) captures a lot of her character. Little of this comes through in her interview. Although it would be difficult to change this without making the book impossibly long, perhaps it explains why the repeat interviewees indicated only a few women starting out in their field had contacted them based on their interviews in the first edition - although possibly it merely reflects that we still need to work on accepting ourselves as equals, worthy of an established woman's time.

I hope many young women will take advantage of the mentoring opportunities offered in this edition.

A Hand Up: Mentoring Women*, Deborah C. Fort, PhD, ed., is available from the Association for Women in Science (AWIS), www.awis.org* .

Tinka received her PhD in Theoretical Condensed Matter Physics from Cornell University in 1986, and now is a staff member at Los Alamos National Laboratory (LANL) working on Equation of State. There she started a lunchtime talk series featuring informal research talks by women. This monthly talk series is nearing its 10th year, and recently picked up sponsorship from the Bradbury Science Museum in Los Alamos. Tinka is also the 2006 president of the New Mexico Network for Women in Science and Engineering, http://nmnwse.org.

The American Physical Society 2006-2007 Travel Grants for Women Speakers Program

Limited Funding is Available for the 2006–2007 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 2006–2007 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 reimbursement.

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 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 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 www.aps.org/educ/com/travelgrant.cfm The Minority Speakers List can be found at www.aps.org/educ/minority-speaker.cfm.

2006-2007 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: _____

ADDRESS: _____

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
The 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 newsletter.

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

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.

SIDE II

Women Speakers List (WSL)
Enrollment/Modification Form 2006–2007

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

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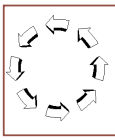

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