

2006 APS March Meeting

Baltimore, MD

<http://www.aps.org/meet/MAR06>

## **Tuesday, March 14, 2006 11:15AM - 2:15PM –**

**Session H5 FEd FGSA FPS and CSWP: Forum: What Has Actually Changed in Physics Departments in the Situation for Women, Graduate Students and Other People?** Baltimore Convention Center 309

**11:15AM H5.00001 Forum: What Has Actually Changed in Physics Departments in the Situation for Women, Graduate Students and Other People?** PATRICK MULVEY, AIP, RACHEL IVIE, AIP, DAVID CAMPBELL, Boston University, MARGARET MURNANE, University of Colorado-Boulder, KATE KIRBY, Harvard-Smithsonian Center for Astrophysics, ANNE CATLLA, Duke University — The decade of the 90's was a period of intense scrutiny of climate issues in physics departments, e.g. the status of women, the job situation for new Ph.D.'s and postdocs, and the preparation of physicists for careers inside and outside of physics. There were many conference sessions on these topics, and both APS members and leadership instigated important efforts to focus on specific areas. These efforts included the program of visiting committees to departments to examine the situation for women by the Committee on the Status of Women in Physics, the AIP's various studies of a statistical nature, and the creation by the APS of a Committee on Careers and the Forum on Graduate Student Affairs, as well as the recent APS-AAPT task force on graduate education. This forum patterned after similar sessions 10 years ago - will examine how physics departments have changed as a result of such efforts. It will begin with short (12-minute) talks by a panel of experts to describe what has happened in key areas. The greater part of the session will be a period of observations, questions, and discussion from the audience and the panel together. The purpose is to have an interchange on these interrelated topics from which we can all learn. THE TOPICS TO BE INTRODUCED IN THE SHORT TALKS AT THE BEGINNING OF THE SESSION ARE: 1) changes in graduate enrollment, composition, and subsequent jobs (Patrick Mulvey); 2) women in physics and astronomy departments 2005 (Rachel Ivie); 3) changes in graduate curricula and environment (David Campbell); 4) CSWP site visits to physics departments what's been accomplished and learned (Margaret Murnane); 5) survey of ethical issues in physics departments and the physics profession: results and reactions (Kate Kirby); and (6) physics departments from the point of view of younger physicists (Anne Catlla). The bulk of the session will be a public forum, on these and related issues, among the audience and the panel.

## **Wednesday, March 15, 2006 2:30PM - 5:30PM –**

**Session R5 FGSA FIAP: Paths from Academics to Employment** Baltimore Convention Center 309

**2:30PM R5.00001 AIP Statistics on Physics Employment Trends**, ROMAN CZUJKO, American Institute of Physics — This talk provides a statistical overview of the employment trends for physicists. The work done by physics bachelors, masters, and PhDs is qualitatively different. This talk will describe the career paths commonly pursued by recent physics graduates at each degree level and will illustrate how these trends have changed over time. It will discuss the indicators that point to both the strengths and weaknesses of the current job market for physicists. The paper will include a discussion of recent reports that claim that American students are avoiding science and engineering. It will conclude with a discussion of the pro's and con's of recent calls for dramatic increases in U.S. degree production in the sciences.

**3:06PM R5.00002 Industry Job Hunting for PhDs.**, BERNARD SILBERNAGEL, ExxonMobil Research & Engineering Co. — The industrial environment presents opportunities and challenges that are significantly different from those in academia. The research problems encountered are often complex and the solutions are generally sought by teams of researchers with a variety of skills from different disciplines. An important criterion for a new researcher in industry is that they be able to represent their area of competency on such a team. In most instances, hiring decisions are based on a reasonable compatibility of the candidate's skills and the needs of the research area, but the supposition is that the individual will evolve with time and with changing assignments. Important attributes for the candidate are solid technical strength in their area of expertise, good "peripheral vision" of science and technology in proximate and more remote areas, and a willingness to adapt to changes in the direction of the project. In contrast to academia, there are a variety of career paths for the industrial scientist, including a long-term participation in research and development, migration into the more practical aspects of the business (such as problem-solving or technical liaison) or management. Initially, it will probably not be apparent which of these paths is the most desirable and, in fact, a person may be involved with more than one during the course of their career. Each of these paths, or a combination of them, can be extremely satisfying and rewarding.

**3:42PM R5.00003 Government Positions for Physicists.**, DAVID SEILER, National Institute of Standards and Technology — There are a number of government agencies that employ physicists in a wide variety of jobs – from student internships to post docs to full time staff positions. You can do real, creative, fore-front physics or pursue a wide range of leadership positions. The possibilities are almost unlimited and so is the impact your work can have on the government, academia, and industry. So how do you go about finding a government job? What qualities or abilities are deemed valuable? What are the advantages and disadvantages to working in the government? I will bring some personal experiences and observations from working in the government (one year as a rotator at the National Science Foundation in the Division of Materials Research and almost 18 years at the National Institute of Standards and Technology, both as a Group Leader and a Division Chief) to bear on these questions and more. Prior to my government career I was a physics professor pursuing research and teaching in academia.

**4:18PM R5.00004 Aiming for Professorship at a Research University<sup>1</sup>**, CHRISTOPHER J. STANTON, University of Florida — In this talk, I will discuss and provide guidance on how to prepare and approach applying for an academic faculty position at a research oriented university as a first time professor. First I will discuss what is expected of a beginning faculty member at a research university. Next I will cover what you should be doing as a postdoc to enhance the chances of a finding a research position at a university. Finally I will go over all aspects of the job search process. Topics that will be discussed include: 1) preparing your CV, research and teaching statements, and cover letter, 2) getting letters of recommendation, 3) preparing for the interview, 4) the "Job Talk", 5) following up the interview, 6) negotiating the start-up package, and finally 7) accepting or rejecting an offer. Throughout the talk, I will try to emphasize what the "search committee" as well as the department is looking for in a successful candidate and some pitfalls to avoid in the process.

<sup>1</sup>Supported by NSF through grant DMR-0325474.

**4:54PM R5.00005 Teaching and Research at Undergraduate Institutions** , SHILA GARG, The College of Wooster — My own career path has been non-traditional and I ended up at a primarily undergraduate institution by pure accident. However, teaching at a small college has been extremely rewarding to me, since I get to know and interact with my students, have an opportunity to work with them one-on-one and promote their intellectual growth and sense of social responsibility. One of the growing trends at undergraduate institutions in the past decade has been the crucial role of undergraduate research as part of the teaching process and the training of future scientists. There are several liberal arts institutions that expect research-active Faculty who can mentor undergraduate research activities. Often faculty members at these institutions consider their roles as teacher-scholars with no boundary between these two primary activities. A researcher who is in touch with the developments in his/her own field and contributes to new knowledge in the field is likely to be a more exciting teacher in the classroom and share the excitement of discovery with the students. At undergraduate institutions, there is generally very good support available for faculty development projects in both teaching and research. Often, there is a generous research leave program as well. For those who like advising and mentoring undergraduates and a teaching and learning centered paradigm, I will recommend a career at an undergraduate institution. In my presentation, I will talk about how one can prepare for such a career.