STRATEGIES FOR CLIMBING THE ACADEMIC LADDER

Sandra Cooper, Catherine Didion, Nancy M. Tooney, and Linda H. Mantel

Moderator:

Sandra Cooper: S. Cooper is an Associate Professor of Mathematics and has been Coordinator of Women in Math, Science, and Engineering (WiMSE) at Washington State University for the past five years. Her activities addressing the under-representation of women in SEM began in 1989 as a founding member of WiMSE, as an instructor of collaborative learning math classes, and through the development of many programs. As Coordinator of WiMSE, she oversees the staff, runs the tutor-assisted study hall, serves on university committees related to this work, and plans and coordinates special events. Cooper is currently a co-PI on an NSF grant designed to increase the recruitment and retention of undergraduate women and men of color in science, engineering, and math (SEM).

Panelists:

Catherine Didion: Catherine Jay Didion is the Executive Director of the Association for Women in Science (AWIS), the largest multi-disciplinary organization for women in the United States with a network of 76 chapters nationwide. AWIS is recognized for its array of programs including mentoring, leadership training, and a database of women in science. Didion is Co-Principal Investigator on several of these initiatives and is the chair of the Environment and Science Task Forces, Coalition for Women's Appointments. She also serves on several advisory boards. Didion writes the bimonthly column, "Women in Science" for the *Journal of College Teaching* and has presented testimony to Congress.

Nancy M. Tooney: Dr. Nancy M. Tooney is Associate Dean of Engineering and Applied Sciences at Polytechnic University, Brooklyn, NY. At Polytechnic, she has served as PI on research grants from NIH, has directed or co-directed educational grants in support of women and minorities from NSF and DOD/ONR and has served as her University's representative to the Gateway Engineering Education Coalition. She is active in AWIS at the National and Local levels and is a member of the steering committee for the Section of Women in Science of the New York Academy of Sciences.

Linda H. Mantel: Dr. Linda H. Mantel is the President-elect of AWIS and is Dean of the Faculty at Reed College in Portland, Oregon. She is also Professor of Biology and prior to her move to Portland, was a faculty member and administrator at City College of CUNY for 25 years. In New York she was active in Metro NY AWIS and the Women in Science section of the New York Academy of Sciences.

The issues and recommendations made by the Sloan project are indeed important to promoting the success of women faculty in science; indeed, of all new faculty. But in order to get to the faculty stage, the pipeline for bringing women students into faculty positions needs to be working well. AWIS has recently completed a mentoring project, sponsored by the NSF, which was designed to provide a pathway for women who might wish to enter the academic track.

The project, "Creating Tomorrow's Scientists--Models of Community Mentoring" involved twelve AWIS chapters and included rural, suburban, urban locations; some were campus-based and others included many academic institutions as well as local industry and government agencies. Each project was community-based, providing activities to fit the needs of the local population and participating groups. Guidelines required that the target population be undergraduate and graduate students with professionals from academe, industry, and government as mentors. A novel requirement was that each project should work with at least two local chapters of professional societies, an important link for supporting women as students and in their later professional careers. Approximately 600 mentees and 100 mentors participated in the project.

Mentoring topics focused on the six areas that students in the past had identified as most important: academic advising, balancing work and lifestyle, career options and opportunities, networking, research opportunities, and self-image and self-confidence. In addition to individual, one-on-one mentoring, activities included small group events, large conferences and panel presentations, and informal get-togethers built around a meal. Preparation of mentors for their role, by formal training, introductory meetings, and discussion of expectations, was an important component of the program as well.

Mentors were primarily from academe (58%), with 21% from industry, 10% from government, and the rest in other professions. Just over half the mentees were graduate students, with the undergraduates about equally divided among the four years of college. More than three-quarters of the mentees rated all six focus topics as very useful or useful, with panel discussions, small group discussions, and lab/workplace visits being most effective formats for sharing information about a topic. About 80% of the mentees reported that their mentors made a very positive or positive impact on their lives; over 85% of mentors reported the same positive impact on their lives.

Networking is a related and important component of career-building for students as well as for faculty and women employed in industry or government. Networking can be an important tool for finding new mentors as you move through the university and into the real world. Diverse networking connections: to student of faculty colleagues, to contacts made through professional societies, through groups of women in science and technology such as AWIS or WEPAN or SWE, or to your local community-based groups can provide critical sources of career-related information AND provide you with links to new mentors. After all, being a mentee is a kind of developmental process -- as your career develops and changes, new mentoring contacts will be a valuable resource. The

fields of science and technology are changing extremely rapidly and dramatically. Use mentoring and networking as tools to help you on your way!

This project provided an important step for women who are pursuing scientific careers and also additional rewards and insights for their mentors. Most of the participating chapters have continued with their mentoring programs, in collaboration with their participating professional societies and other local organizations. Future mentoring programs can make additional use of electronic communications, including e-mail, Web sites, and listserves, that will enable individuals and groups to pool their resources of knowledge and experience in a way that encourages the next generation of women in science.