

# Personal Professional Development

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**Abstract.** Three workshop sessions on personal professional development were held during the Third IUPAP Women in Physics Conference. These were designed to teach participants about planning for career success, “survival skills,” negotiation, and ways to transition into scientific leadership positions in their own countries.

**Keywords:** women in physics, personal professional development

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Three workshop sessions provided personal professional development advice and opportunities for conference attendees. Session I, about planning and achieving your career path, was aimed at graduate students, postdoctoral fellows, and others early in their careers. Session II helped participants develop negotiation skills, and was suitable for attendees at any stage in their career. Session III targeted mid-career women aspiring to move into leadership roles in their institutions, professional societies, and national physics communities. One of the main points to be emphasized is that the participants greatly enjoyed the workshops and felt that they had gained personally and professionally by attending them. As a result of the success of these sessions, we recommend that all IUPAP-sponsored physics conferences organize and offer professional development workshops to help attendees—especially those from countries where physics-centric professional development is limited—succeed in their careers.

## SESSION I: NAVIGATING LIFE TO SUCCEED PROFESSIONALLY AND PERSONALLY

The main portion of Session I, attended by about 70 conference participants, was an engaging workshop led by Beverly Hartline (U.S.) and Hong Zhang (China-Beijing) called “It’s YOUR Career. Take Ownership to Get Where YOU Want to Go.” Participants were led through the steps involved in planning career goals and navigating opportunities and barriers to achieve them. Because what is important to one person is not the same as what is important to others, women and men who understand themselves well can make the choices that help them succeed and even overcome the practices and mindsets that make physics unwelcoming to women in many countries.

When planning for one’s professional career and personal and professional life, the first step is to determine your goal, ask yourself some questions to clarify your aims, then begin planning. You need to decide on the activities or strategies necessary for accomplishing your goals. With respect to your definition of success, are you striving for recognition, advancement, and peer respect? Do you aspire to make a major positive impact in your community, country, or scientific field? Or are you more motivated by the intangibles of fulfilling your passion, achieving independence, or having a healthy balance between your work and your family? It is very helpful to know what you like and dislike about your work, what you enjoy, and in what areas you are among the best in the world. No matter where you are in your life or career, your special talents truly excel in some areas, and you will want to build on this capability.

Participants were given some time to speak with neighbors about themselves and to take the first steps toward formulating goals that take advantage of what they enjoy and do in an outstanding way. Then participants were asked to think of someone they know who is already successful at what they want to be doing in 2, 5, or 15 years. What skills, experiences, and talents do these people have? What kinds of assignments and opportunities can help you develop and demonstrate the qualifications needed to achieve your career goals? The challenge then becomes

developing a strategy to obtain the right types of assignments and complete them successfully.

There is not only one route to a destination. And the straight line might not be best, or even viable, if there is a barrier in the way. You must reevaluate your strategy often so that you can adjust to new conditions, including your research direction. Be sure to match your approach to the current and next career step, not to the last one. Successful people strive to act, speak, write, and even dress in the way that is appropriate to their next position or to the roles they would like to be assigned.

Virginia Valian in her book, *Why So Slow?* describes two barriers to women's advancement [1]. Although based on psychological research in the U.S., its concepts likely apply to most countries and social/cultural environments. The first concept is that of "gender schema," widely held beliefs about the psychological traits of men and women that lead many people to overrate men and underrate women with respect to competence, intelligence, and leadership ability. The second concept is "accumulation of advantage." This term describes the cumulative, long-term effect of small differences in the way males and females are treated every day throughout their lives, from the time they are infants to old age. The amount and type of praise given to males and females and all the other interactions people (teachers, parents, playmates, colleagues, and strangers) have with males and females tend to result in females feeling less able to succeed in challenging fields like physics. If you recognize that this feeling is a response to your environment and not an intrinsic reflection on your capabilities and potential, you can consciously counteract it, and help others to do so, as well.

As Figure 1 shows, for any ambitious and important adventure—and your career and life are definitely both—you have considerable control over your preparation and your choices. You may not control how others treat you,

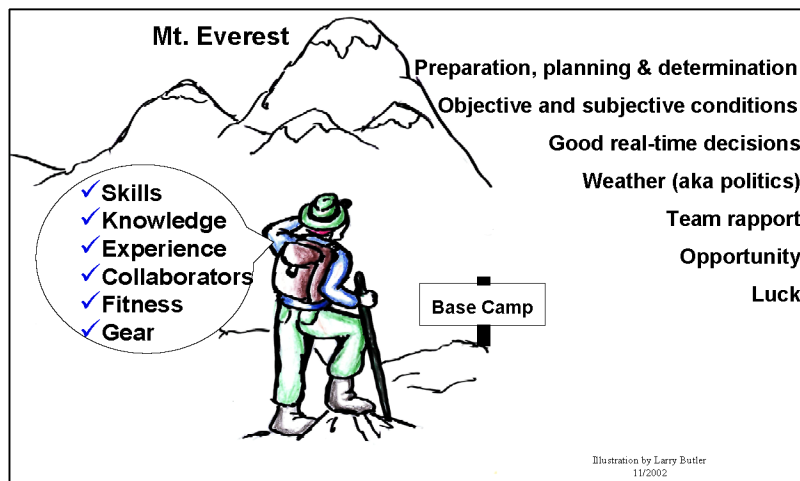


FIGURE 1. Cartoon showing what it takes to achieve challenging goals.

but you can control how that affects you. The system is not fully deterministic, and that is part of the fun. Nonetheless, you can take advantage of the considerable control you do have to steer your career in the direction you want to go, to prepare for and take advantage of special opportunities that might come your way, and ultimately to achieve your dreams!

Physics as a field, along with the institutions where physics is practiced (universities, research laboratories, government institutes, and others), has typical practices and mindsets. Although these vary from country to country, they tend to reinforce the barriers Valian describes and are often experienced as unwelcoming to women. If you understand these practices and mindsets and use them to your advantage, you can accomplish much more, feel greater satisfaction and accomplishment, achieve more work/life balance, and get where you want to go.

Participants were urged to ask lots of questions, have confidence in themselves, network to help themselves and others, always deliver more than they promise, and be sure to have fun.

Anita Mehta (India) emphasized the need for patience and acceptance of problems with a sense of humor. She spoke of career issues for women in physics in India, borne mainly of the conflict between official intention and feudal traditions. Because ultimately problems are only solved by dialogue, it is important to stay on and fight, even when the going gets tough. She gave several examples where there are differences between what the laws say and how they are implemented, and emphasized that more important than improving the laws is to see that blatant injustices are not committed at the implementation level.

The perspectives and lessons from India likely have common threads with situations in both developing and developed nations. The examples of inequities as well as the suggested solutions can become tools of awareness and strategy useful to improve the prospects for women—especially young women—in science internationally.

## SESSION II: NEGOTIATING TO GET WHAT YOU NEED AND WANT

Women in most cultures are usually socialized not to speak up directly for what they need and want—even in professional settings. Learning how to negotiate is critical for women physicists if they are to build a successful career, and begins in graduate school or earlier. The first step is to realize that negotiation is a fully acceptable activity in which both sides of the negotiation usually benefit.

The primary difficulty for women in using negotiation as an everyday tool to keep one's work environment effective is that, according to Linda Babcock and Sara Laschever in *Women Don't Ask: Negotiation and the Gender Divide*, women not only do not ask for things they should have, they put up with conditions inimical to their effective functioning [2]. These conclusions are drawn from several large studies conducted by the authors. To negotiate well, the first step is understanding that you are entitled to have working conditions as good as anyone else's in your department or division. Areas where inequities arise include position title, salary, funding for research assistants, equipment, lab space, and access to local power structures. Negotiation for a new position, for winning your colleagues to your point of view, or for budget increases does not have to be painful and echoes the message in Workshop I to own your own career.

Anne MacLachlan (U.S.) led this workshop session to help participants at any career stage learn how to negotiate successfully. Participants discussed and resolved scenarios.

Behavioral scientists have identified various strategies for women to adopt. The first of these is to know what is possible. Far too many women postdocs and junior faculty start behind men in these positions, because they did not know what was possible, and so did not ask. Being fully informed about all aspects of a position is essential with respect to funding, resources, publication expectations, leave, etc. A fairly recent study by Sigma Xi on postdocs in the U.S. found that those who had a clear contract were much more productive and had few disputes.

Discussion touched on how to negotiate various obstacles put up by advisors, colleagues, and employers, drawing on scenarios raised by participants. Tentative negotiation styles are likely to invite a negative response, whereas a firm but polite manner usually is welcomed and is more successful. Situations in which negotiation could be used varied substantially by career stage. Junior physicists could be taken advantage of simply because they were not informed about intricacies or politics, especially in an academic environment, and were uninformed about possibilities for salary and benefits.

Some participants either had not developed a network for support and information, or had not used it. The need to be well prepared with a network in place before negotiation was emphasized. It is very difficult to be outmaneuvered when one has all the data one requires. Some senior women are in situations in sore need of remediation but find it difficult to negotiate their way out, simply because the situation has existed for a very long time and is tacitly supported by many people. Negotiation alone will not always work in situations like these. Recourse to formal complaints, legal action, or manipulation might be necessary.

When women do their jobs very well, more work tends to be expected of them and they cannot stop—out of a commitment to students, employees, or other people. However, commitment to one's self is essential, not only to avoid exploitation, but to pursue activities that are career building.

Social science is able to bring perspective to many issues experienced by women in physics, including the implication sometimes experienced by women that “you are the problem, and you should fix it.” Societal changes affecting women are recent in terms of the history of many countries.

The question of unintentional biases displayed by both men and women was also discussed and participants were referred to a multilingual website, “Project Implicit,” aimed at helping us understand our own biases. Knowing these and the extent of prejudice in the workplace can facilitate working to overcome bias as well as countering it in negotiation. Checking one's own bias is highly recommended and may be shocking.

Everyone participated and came away from the workshop with an idea of the kind of negotiation skills that they lacked or found difficult, along with strategies for filling these gaps.

## SESSION III: TRANSITIONING INTO LEADERSHIP POSITIONS

While women faculty have made significant strides in academic work, women are still very scarce throughout the world in the upper levels of academic administration, industry, research institutes, and government. It has been reported that women make up only 20% of all chief executive officers in the United States, yet they make up more than 50% of the undergraduate student population, even in the sciences (though not yet in physics). The disparity in women in leadership is recognized as having a profound impact on an institution's intellectual capital. Thus, it is imperative that women faculty, particularly in the male-dominated science and engineering disciplines, develop meaningful survival skills and success strategies that will prepare them for achieving their career priorities and maximizing their personal and professional resources.

Led by Kelly Mack (U.S.), this workshop was designed to help individuals in the middle of their careers prepare for and transition into leadership. Emphasis was placed on expanding intra- and inter-institutional networks, appropriate selection of role models and mentors, effective communication skills, personal development, stress management, and conflict resolution.

At a practical level, the workshop tried to get the participants to be introspective and ask themselves whether they had achieved what they wanted in their careers, and whether they felt that they were recognized for what they had achieved. When the answer was in the negative, they were asked to think about whether they could be more valuable outside their institutions, or in other ways than they were considering right now. The participants were prompted to examine what they really wanted to be valued for by their colleagues and the world, by asking all of them to imagine themselves winning a coveted award in the next 10 years and preparing an acceptance speech. Once the goals of the participants were clear, there were discussions on how to reach the goals by developing survival skills effective in overcoming biases and barriers related to gender. Their skills in personal reflection, networking, time management, and self-marketing were also honed.

## SUMMARY AND RESOLUTION

The three workshop components together covered navigating life and work environments in the field of physics, negotiating, and making the transition to leadership. Understanding prejudice and bias as part of social systems is useful. The diverse experience of the countries represented was informative. In the U.S., finding responses to unwelcome or illegal questions in job interviews may be an issue. In Vietnam, salary and marriage issues are more fundamental. The global network may provide some relief and a place to discuss with peers.

In view of the value brought to the participants by the workshop, a Resolution was formulated:

*The delegates emphasize the importance of encouraging and supporting women in physics to develop the skills and knowledge to launch their physics careers, gain reputation and visibility, and win deserved recognition and success.*

- 1. Since the learning in workshops on career choices, negotiation, and professional skills is invariably useful to women in developing their careers, we resolve to recommend to our employers, funding agencies, and physical societies that they offer and hold professional development workshops for women in our respective countries. A public inventory of such activities should be kept by the physical societies.*
- 2. The IUPAP Working Group on Women in Physics will ensure that links from the IUPAP Women in Physics webpage (or wiki) are set up to useful material in professional development. These should include best practices in different regions and cultural areas.*

## REFERENCES

1. V.V. Valian, *Why So Slow? The Advancement of Women*, Cambridge, Mass.: MIT Press, 1998.
2. L. Babcock and S. Laschever, *Women Don't Ask: Negotiation and the Gender Divide*, Princeton, N.J.: Princeton University Press, 2003.
3. B. Nosek, M. Banaji, and T. Greenwald, Project Implicit website [<https://implicit.harvard.edu/implicit>].