

## SOME REALITIES OF BEING A FACULTY WOMAN IN THE '90s

Dr. Irene C. Peden  
 Division Director  
 Electrical and Communications Systems  
 National Science Foundation  
 1800 G Street N.W.  
 Washington D.C. 20550

The realities of faculty life as I see them are a mixture of challenges and opportunities. It is my intention this afternoon to give you the most balanced view possible. Inevitably, the view will be seen through the lens of my own experiences and observations over 30 years in academe. You might consider what follows to be a longitudinal anecdotal view of the climate for engineering faculty women.

Several snapshots come to mind of events that took place in the '40s when I was an undergraduate student in engineering. I still hear them echoing behind some of the decisions made about women, and lurking in the darkened wings when evaluations of faculty women are center stage. I hear them when an accomplished woman is denied or delayed in a tenure decision while male colleagues of similar or lesser excellence are passed on through the filter. I hear them when I read or hear of delays in, or denials of promotion to full professor of women of equal or greater accomplishment. I hear them when I read that engineering faculty women typically receive lower salaries than male colleagues of equal performance and time in rank, and lower student ratings than their male colleagues - an interesting contradiction to the claim one often hears that women are more interested than male faculty in teaching, and hence less willing or able to focus on the level of research activity required for the top academic rank in the Ph.D granting institutions.

Here are the little vignettes, or snapshots, from my early undergraduate years. Having made a late decision to major in engineering, I had to double up on background courses. Thus, I took engineering drawing and descriptive geometry in the same term, and from the same instructor. He was near retirement age at that time (1944), and unabashedly displeased with the presence in his classes of a small blond person in bobby socks and saddle shoes. Although I can't say this about all the engineering courses that came later, my talents ran in the direction of those two courses. My engineering drawings were so good that the professor posted them on the wall nearly every week. I remember finishing the descriptive geometry final exam first, and getting it all right. Doesn't that sound like a pair of As? Not on your life. He gave me Bs in both courses. The reason? "I couldn't

give an A to a girl, Miss Carswell". That was a reason in the forties, and there was no recourse.

Job hunting was a difficult and discouraging experience in 1947, and even proved impossible for some of the other women who graduated with engineering degrees in that era - particularly the chemical engineers. Almost everywhere I went to interview for jobs known to be open, a woman, either a personnel representative or secretary, was sent out to inform me firmly that "We've never hired a woman before", and disappear. That was a reason in 1947, and there was no recourse.

"I couldn't give an A to a girl", and "We've never had a woman in that position before". If women instructors on the average receive somewhat lower student ratings than men, aren't the students saying that they couldn't quite go the distance to "excellent" (A) in rating them? I hear the refrain when I hear of tenure denials and delays [1], and of the longer time it can take women to get over the line to full professor. When we read data on the salary gap, whether the merit evaluations behind the figures were made by peers or administrators (almost exclusively male in engineering), my third ear hears the echo: "I couldn't give an A to a girl". Reflecting on the maleness of the department heads and deans' clubs, it rumbles below the surface again when a woman is a candidate for one of these responsible administrative positions. Both phrases repeat in fact, since reluctance to award her an "A" rating is coupled with the underlying resistance to having a woman in such a position. Almost none of these departments or colleges have ever done so before and I know of no case where one woman chair or dean followed another. Perhaps it is too soon. Very few women have chaired their departments to date, though the number is not zero as it was a few years ago. I know one woman dean of engineering and have heard of another, so that barrier has been broken. The distance from 0 to 1 is a lot greater than the distance from 9 to 10, and I wonder how long it will take us to get *there*? We have certainly come a long way toward full participation in academic administration, but baby, there is still a long way to go. If you are interested in this issue, you will enjoy Mary Catherine Bateson's marvelously insightful book *Composing a Life* [2]. She shares her experiences as Dean of the Faculty at Amherst, as well as other facets of her life and career. I recommend it highly.

Civil rights legislation of the '70s has made it necessary nowadays, where individuals in underrepresented groups are concerned, to find them unqualified in order to justify second class treatment. There are still those who will want to convince you of your unsuitability on the basis of quality, irrespective of the facts. This scam is particularly easy to sell when there is something unique about either the position or the background of the candidate - conditions that are well met by job descriptions for faculty positions, chairmanships and deanships, and by the patterns of accomplishment of individual academics in teaching, research and service. This is a hidden agenda we did not have to deal with when I was young. Prejudice was out in the open, and it was o.k. to put the cards on the table. In some ways that was easier to deal with, though it produced a lot of

distress. Those of us who are older know what the game is, but I have a lot of concern for young faculty women faced with the attitude that they are not quite up to snuff. If you ever find yourself faced with this power game, my advice is to remember how good you had to be to get where you are. You haven't changed. You have only entered a higher resistance medium. Its density increases as you move up, terminating in the glass ceiling you've heard so much about. In the words of Dr. Frances Connely, the Stanford neurosurgeon whose resignation attracted media attention, it is the summation of years of micro-inequities that gets to you [3]. The ongoing stream of discounts, discredits, interceptions of your ideas, interruptions of your conversations, oversights that cut you out of information or events to which you had earned access, and so forth, comprise some of the micro-inequities experienced by women in this society. They can impact the careers of professional women. They are part of the reality of being a faculty woman in the '90s. I know of no way to stop this, but awareness of the undercover game can help you to cope.

Engineering has a tendency to attract and retain many logical, analytical and introverted people of both sexes [4]. On top of that, we who are women have been socialized to be more accommodating than assertive. This is not a combination that makes for an easy life in the marketplace - even that of the ivory tower academia is thought to be.

Where in your professional world are you likely to have to hold your own or be left in the propwash? Well, faculty get into contentious situations over turf like any other group. Turf for us tends to translate into space, equipment and curriculum. Space involves laboratory and office space for ourselves and/or our graduate students; curriculum means access to the desirable courses in our specialty areas. These turf aspects become especially intense when curriculum revision enters the picture and favorite "owned" courses are on the chopping block. Equipment considerations come into play when access to a fair share of departmental resources such as computer and laboratory equipment is available for negotiation. These are gender-neutral turf battles in and of themselves, but faculty (often, but not necessarily always women) who are weak in negotiating skills and situational awareness are the ones most often at the end of the line, hoping for the best but not demanding it. We women have a tendency to believe that life is truly a meritocracy and to cling to this belief too long after the evidence is in. I have seen new faculty women not offered the full complement of perks (equipment, space, summer support, help with industrial contacts, etc.) routinely offered to male faculty recruits, and faculty women in general over-assigned to large introductory courses while male faculty shared the wealth of the higher level courses with the intellectual content to keep themselves updated in their research areas and to attract graduate students to their programs. It is hard for many women and some men to be comfortably assertive. This is not made easier when you are surrounded by individuals with the deeply held belief that they shouldn't have to "give an A to a girl", and who preferred the days when they did not have to deal with a woman in a faculty position. It is especially hard to handle when there are so many of them and so few of you, but this is a reality

of faculty life in the '90s. Achieving critical mass in our corner of academia should be a goal for all of us.

In the face of all those realities, there must be an "up" side to the story. For me, there is and always has been. I like the intellectual content of my field. The specifics have changed considerably over 30 years since electrical engineering itself is a vital, living, evolving discipline. This has kept me stretched in really agreeable ways as I continually learned new things to keep up with it. It has been an ongoing repetition of the graduate student experience. I found that terribly hard work, but a big thrill everytime I struggled for something and then got it. I enjoy the freedom one has as a faculty member to choose what she wants to work on, and the challenge of getting the program together - graduate students to work with on it, support for them and for the project, and so forth. I've enjoyed and appreciated the opportunity to know the students and to be surrounded on campus by a young population. Teaching has been rewarding, most of the time, though not in the monetary sense as we all know. For all their warts, I've enjoyed and appreciated my faculty colleagues (most of them). All the way through the faculty experience there have always been good friends and the occasional cherished mentor. I'm sure you have such colleagues, too.

The importance of mentors cannot be overemphasized. A mentor is a friend and supporter who will make your case in places where decisions are made and where you do not have access. An example would be meetings of the senior faculty at which your case comes up. Later in your career, a mentor will represent your interests to professional society Fellows and Awards committees when you have been nominated for such honors. A mentor in your department tells you how things *really* work (as opposed to how people say they work). Mentors write the right kind of letters when you are looking for a job and call their friends in the department(s) to which you have applied in order to get the backchannel networks working for you. There is a lot of that, by the way, in case you didn't realize it. There is a really insightful article in a recent issue of the magazine of the Association of Women in Science (AWIS) about letters of reference and the ways in which women can get clobbered by the use, or withholding, of key words and phrases when they, and probably also men from underrepresented minority groups are being described as candidates for positions [5]. A mentor writes an enthusiastic letter, does not damn you by faint praise, or "attempt" to give a balanced view by articulating your shortcomings as well as your strengths. There are appropriate places for that, but they are not in letters of recommendation. A mentor does not back down and yield to male peer pressure when there is resistance in the group to your candidacy for a place in the winners' circle. A mentor is proud of you and your track record, and is not afraid that you will show him or her up.

I am glad for young faculty women that it is no longer necessary in many institutions to be the first woman in the department or college. When you are in that position, you have all the teaching and research requirements that go with

the faculty job, and they are very time consuming as you know. On top of that, you have more service jobs. Instead of the normal complement of committees on which you are assigned or invited to serve, you are under pressure to do more of them to represent your gender group, sometimes as a token, sometimes because they can get a woman and a representative of your department or college in one appointment. Sometimes even because you make good contributions.

There is considerable demand for your time to advise and support women students and other women faculty, to be involved in outreach activities, and so forth. These latter endeavors are very important, but they are not normally rewardable in the academic merit system. You have to count on making a sacrifice somewhere. Minority faculty also find themselves in this position, but the white male faculty population does not, and tends not to make any allowances for the value added and extra pressure in connection with tenure and merit evaluations. I claim that we work harder to reach the same place in academe.

We are talking about a very busy life. This is true even when you are single and have no one else to think about. Another reality, though, is the fact that most married faculty women have husbands who are also professionals and thus are very busy themselves. Many also have children, which puts another whole order of magnitude into the time problem. Most of your married colleagues have wives whose first priority is being wives, mothers and helpmates. This can ease their workload more than your spouse can ease yours. Another facet of the two-professional family situation is the two-job problem. It can be difficult to get well located in the first place. It can be even more difficult to move. Being geographically bound or having to move at the wrong time for their own careers are other realities for many faculty women. These realities reduce the cards we have available to play in the academic advancement game.

The National Science Foundation has a number of programs designed specifically to assist women and underrepresented minority faculty in overcoming the kinds of barriers to academic progress I've been describing. For junior faculty women who have had previous Federal research support, we have *Career Advancement Awards*. These can provide a maximum of \$50,000 for 12 months, with an additional \$10,000 for equipment, if needed. The disciplinary program officers like this, because 75% of the money is returned to their programs from other internal NSF sources. *Research Planning Grants for Women* are designed for new women investigators who have not previously served as Principal Investigator on a Federal grant. These non-renewable awards are normally for 12 months at \$18,000. Again, these are budgetary incentives for the program officers. The *Faculty Awards for Women Scientists and Engineers (FAW)* were granted last year to assist tenured women faculty at the Associate Professor level over that magic line to full Professor status. These were research awards of \$50,000 per year for 5 years. Because of the recognized realities for engineering faculty women in the '90s, the Engineering Directorate was provided the opportunity to make a full 50% of the total number of NSF FAW awards. Whether the program will be continued is not known as of

this moment. Those of us who understand the problem sincerely hope that it will be. The *Research Initiation Awards (RIAs)* for new investigators contain another budgetary incentive for disciplinary Program Directors to fund women, and as you may have noted if you are watching for such things, women have been very well represented among the Presidential Young Investigators named since the inception of the program in the '80s. In the Engineering Directorate, we have a special augmentation fund that provides the Program Directors with yet another incentive to fund women and minority faculty as Principal Investigators. I am personally gratified to see the premier Federal funding agency for academia going the extra mile in all these ways to assist non-traditional faculty in their quest for full professional participation. The motivation, of course, is recognition of the very high value that academic reward systems place on research and the acquisition of grant funds (they count, believe you me) by the faculty. In a whole set of institutions, this is the *sine qua non* of advancement, and one is not viewed as a fully valued colleague without a good track record in research, the publications that result from it, and the grant production that supports it (along with the institution itself via the overhead and capability to buy back some of one's time).

A question that inevitably comes up in connection with these special programs concerns the color of the money. Some of your colleagues would have you believe it is somehow second class because it is "earmarked", and/or that you don't have to be very good to get it - just female. Some of you are uneasy about the possible validity of this, too. My view of it is somewhat different. Most successful grantspersons have made connections, albeit different from the special programs. Being in the majority, quite often with a quantity and quality of advice from senior faculty that you don't usually have access to, they learn how the grants games are played. If they have the funds, which sometimes department chairs or faculty mentors can provide by putting them on them on grants to get them started, they learn to visit with Program Directors in their offices and at technical meetings. Otherwise, their mentors provide them with helpful information. It is an advantage to drop in at the Foundation to chat and to gather information about research priorities, especially in the current funding climate. All the new FY '92 money in my Division came in the form of special initiatives, for example. We do put out program announcements and send them to as wide a distribution list as we can, but still, those who take the initiative to get in touch with us are likely to have the information sooner. Even though NSF's primary purpose in offering these special programs is to be sure that you have equal access to research funding, the opportunities described above provide you with a connection, too. It is the chance to compensate for the probable lack of mentoring in your home situation by making some special channels available to you so you'll have travel funds to visit the agencies, go to the technical meetings where people and information circulate, and the confidence that comes from being a Principal Investigator to talk with your Program Director about the future directions and priorities for research in your field. When we know you, and know what your research interests are, we can also invite you to serve on proposal review panels at our expense, which gives us the benefit of your expertise, and gives you yet

another reason to come to Washington to touch bases. To me, this concept of first and second class money is meaningless. So is the idea of being a token. We are still so few in numbers that we sometimes find ourselves the only faculty woman or woman engineer in a particular sought-after assignment. Why not think of it as a chance to show what you can do? What does it matter if you are a "token" so long as the assignment is meaningful, interesting, and/or fits with your own values and priorities? Having had it both ways, I'd rather be *included* because I'm a woman than excluded for that reason. Another reality of being a faculty woman in the '90s.

In closing, I want to say again that I've had a wonderful, interesting, even exciting career. In spite of the war stories I've told you, I would do it all over again. If I have a regret, it is only that it is too late to start over, and to be a *young* faculty woman in the 1990s. This is a truly exciting time to be an engineering faculty member. We at NSF believe that engineering education itself is in a process of substantive and meaningful change. It is happening now, and the four large Engineering Education Coalitions we are presently funding are clear evidence of this. All at once and on a number of different fronts across the country, Coalition schools are addressing themselves to innovation in undergraduate engineering curriculum, to substantially increasing the participation in engineering of underrepresented groups of students including women, and to innovation in the delivery of course materials. There will be another round of Coalitions in FY'93 as well. You have the opportunity to be a part of this, and other important NSF-initiated educational innovations, that we expect to lead to a paradigm shift for academia.

I could not wish more for you than that you seize these opportunities, that you congratulate yourselves for all you have achieved, that you keep forging ahead, that you network and otherwise support each other, and that you have rewarding and challenging careers as engineering faculty women.

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