AC 2010-1415: CONFRONTING THE UNIQUE CHALLENGES FACED BY NEW FEMALE FACULTY

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Confronting the Unique Challenges Faced by New Female Faculty

Abstract

As a first year female faculty member joining an all male faculty group, many unique challenges present themselves. These challenges include the usual of a new faculty member such as time management, balancing career and family, adjusting to a new environment, and gaining the respect of students and colleagues. However, as a minority faculty member, additional challenges include lack of role models, fitting in, and gaining the respect of male students. These challenges will be further outlined in the full paper.

This paper explores ways to confront these challenges. A strong support system, both professionally and personally, is essential. This support system comes in many forms, including community and university resources. A faculty mentorship program within the university has been very valuable to junior faculty. Being a mentor to female students has also been a way to overcome these challenges. The teacher becomes the student when encouraging young women to stick with engineering, and it is a very empowering experience. In the full paper, ways to overcome the challenges discussed will be explored in greater detail.

Introduction

It comes as no surprise that the number of female faculty members in engineering is quite low. In 2006, a reported 10.8% of tenure and tenure-tracked engineering faculty were female and 5% of full professors of engineering were female[1]. While these percentages are significantly larger than those of 1985 (2.1% and 1% respectively), they still remain low when compared with other fields. The National Center for Education Statistics reported in 2007 that 53.7% of faculty were female, leaving engineering behind at its 10.8%[2]. Because of this underrepresentation, most engineering departments are predominately male.

New faculty members of any gender will face many challenges their first year. These challenges include time management, balancing career and family, adjusting to a new environment, and gaining the respect of students and colleagues. As reported by Mary Feng *et al.*[3], one study showed that women faculty were more likely to struggle with balancing career and family than their male colleagues. This is true for most fields, not just female engineering faculty. Any mother who has left her child to go to work can attest to that aspect. The additional challenge for females pursuing tenure is in the timing[4]. Workloads and expectations are high when faculty members first begin their careers and this often coincides with the time most women are ready to start a family. This added pressure can be extremely overwhelming and having good role models to support women through this time is crucial to their success.

There are some unique challenges that female faculty face in addition to their male counterparts, including a lack of role models, fitting in, and gaining the respect of male students. In this paper I will present some ways that I have faced these challenges over the last year. Some of my efforts have been rewarding while others did not work out so well. I will also present future ideas of how to continue battling these challenges.

Lack of Role Models

Studies have shown the importance of role models for female engineering faculty in obtaining success in the classroom[5]. To face the challenge of a lack of female faculty role models, I will begin by asking several questions.

- What is a role model?
- What am I seeking to gain from a role model?
- Who can fulfill these needs effectively?
- How can I find the person that will fulfill those needs?

The next section will discuss the different types of role models and how they apply to female faculty. In the proceeding section I will outline some effective ways I have been able to gain fulfillment in seeking different role models.

Types of Role Models

Simply defined, a role model is a "person whose behavior in a particular role is imitated by others"[6]. David Gauntlett in *Media, Gender, and Identity*[7], notes that a role model can come in many forms. He identifies six types of role models: straightforward success role model, the triumph over difficult circumstances role model, the challenging stereotypes role model, the wholesome role model (does not apply well here), the outsider role model, and the family role model. When defining a role model, we must look for the behavior of which we are looking to imitate and find a person within one of the six broad categories. We will now explore each type of role model and how they fit into supporting female engineering faculty.

With only 5% of tenured engineering faculty being female, there is an obvious lack of the straightforward success role model. Having never learned from a female engineering professor, I found myself lost when thinking about how I wanted my classroom structured. During my education, I had several fantastic male professors, but no female professors to look up to. I thought back to the professors I had during school and who I thought had been the best teachers. I tried to mimic their styles and the way they dealt with students, but found it difficult to do so without losing part of my femininity. I want to fit in with the male staff, but at the same time maintain myself and who I am. So the question becomes: how to find this elusive role model? This will be discussed in the next section.

For our purpose, the triumph over difficult circumstances, challenging stereotypes and the outsider role models are rolled into one. Even with the rising success of female engineers, there is still a strong stereotype that it is a "man's field." According to Michael Bimbaum, of the Washington Post, engineering classrooms are tailored towards males[8]. Because of this and the lack of encouragement for young women to pursue engineering[9], only roughly 17 percent of undergraduate engineering degrees were awarded to females in 2007[2]. The percentage is even lower for electrical engineers at approximately 12%. This stereotype is evident when talking with strangers who are generally shocked to find out I am an electrical engineering assistant professor. I often hear "that field is mostly men, correct." Sadly this statement is in fact correct. Because of this fact, most female engineers will at some point feel stereotyped and like an outsider.

The family role model is an important one for female faculty with young children. Becoming a parent is a challenge in its own right and when you add to that the pressures and challenges of being a new faculty member, it can become overwhelming quickly. Many times over the last year I have looked for someone, anyone, who knows exactly what I am going through. Male faculty also face the challenge of balancing their career and their family. However, as one study showed[3], women find the balance to be more of an obstacle than their male counterparts. Having a role model that has successfully balanced being a successful teacher with raising children is important.

Searching for Role Models

I ultimately determined that what I needed from a role model was someone who 1) has a similar teaching philosophy as I do, 2) has felt like an outsider so I can get some ideas on how to deal with those feelings, and 3) has raised young children while seeking tenure. I was ultimately looking for someone who could empathize with my challenges as a new faculty member and give me advice/support when needed.

One program that has been particularly useful in this quest for a role model is the university's mentorship program. Junior faculty are paired up with senior faculty members who serve as mentors. This has been an extremely valuable resource. It was comforting and helpful to have another female faculty member with whom to discuss professional and personal struggles with. It was helpful to know the challenges I was facing were not my own and to have someone to look up to. My faculty mentor has been great in giving me advice on the tenure process and how to balance my family and work responsibilities.

Other universities have similar programs in place, while others allow the faculty members to seek their own mentors. I found with my busy schedule it was difficult for me to meet other faculty members outside of my department. Also making it difficult is the age gap between me and the majority of tenured faculty. I was, and still am, often mistaken for a student. It was essential that my university paired me with a mentor they thought was suitable instead of leaving me on my own to meet someone. The mentorship program helped to fill my need for a straightforward success and family role model. However, it left a gap in my need for an outsider role model since my mentor was not in engineering where women are so scarce.

To fulfill the need of the outsider role model, I have found making a connection with other female professionals in the community very helpful. Through friends I was able to form a small group of young professional females who face many of the same challenges as I. Discussions on how to deal with specific situations at work have been helpful as well as talking about how to deal with male co-workers. We generally connect via email, but try to gather once every couple of months for a casual dinner meeting.

Another way I have helped to fulfill my need for a role models is by being a mentor myself. I am a co-advisor for the Society of Women Engineers (SWE), and by involving myself with the female students I have found myself becoming the learner. Seeing the enthusiasm they have and talking with them about how to deal with situations has been beneficial. I find encouraging them along their journey helps me to encourage myself as well.

Fitting In

The challenges with fitting in apply not only within department, but the entire university as well. Everyone in a department can be extremely welcoming and kind, but if you have nothing in common there is no way to fulfill that gap. Gender and age differences both play a role in this challenge, and neither can necessarily be overcome. Male faculty cannot empathize with being a young mother and a new faculty member. This leads to feelings of isolation and loneliness.

One way to address this is to join new faculty groups at the university. By meeting young females in other departments, it helps to create connections to people on campus who have similar interests and career goals. The void of connecting with other female engineers, however, still remains.

Dealing with Male Students

Engineering classes are dominated by males with females making up a very small percentage of the class, particularly in electrical engineering. This alone is not intimidating because most of us have had all male colleagues our entire school careers. However, many of the students come from nationalities where women are not usually in roles of authority. Because of this there is an evident lack of respect. I've found myself the target of many arguments and at times aggressive "requests" for increases in grades. This can be very intimidating and frustrating to deal with. You have to be careful not to let these negative attitudes get the best of you and lead you to start questioning your decisions.

There are a couple of ways I have found to deal with these challenging students. The first is to be very firm at the beginning of the semester in regards to expectations. It must be made clear that you are in charge and that is the end of the discussion. Secondly, it's imperative to stick with what you say the first time. If you give any leeway in your decision then you have opened up the gates for grade negotiation, which is not an effective teaching style. Thirdly, support from my department chair has been key in dealing with these issues. His guidance and reassurance in my classroom decisions have been imperative to keeping me confident in my ability to deal with these students.

Conclusion and Future Plans

Despite efforts to connect with different types of role models and become a more effective teacher by example, there still exists a lack of connection with the role models I am seeking. There is no easy solution to this problem simply because of the lack of female engineering faculty. One way to fulfill this need for support is by reaching out to other universities in hopes of finding a mentor. There are several drawbacks to this though. First, email and phone conversations can be helpful, but nothing takes the place of face to face human contact. Travelling to other universities to meet with mentors is an option, but that takes time and money, both of which are difficult to come by. It would be helpful if there were outreach groups in place to support this type of interaction. A network of female engineers who are tenure and tenure-tracked faculty would be very helpful to junior faculty members like myself looking for support.

I am currently looking at forming a female faculty group at my university to help women on campus connect. This would allow for a connection with more straightforward success role models who have the experience and knowledge it takes to be successful. It would be helpful to meet, at least, once a month to discuss the difficulties women faculty face and how to deal with these challenges. It would be beneficial to future female faculty entering the university if this group was in place. They would have an immediate resource at their disposal.

Experience will also play a role in facing the challenges I have encountered as a junior faculty member. Over the years I will be able to refine my teaching style and learn to be firm and effective when dealing with difficult students. Time will also allow me to have connected with more people and to have a larger network of support. Women supporting other women is one route to success that I will continue to pursue. The challenges that female faculty face in a male dominated field of study are difficult, but if faced head on and with a plan can be effectively dealt with.

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