

**ENGINEERING THEIR FUTURES:
THE EDUCATIONAL AND WORKPLACE
EXPERIENCES OF FEMALE ENGINEERS**

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Women in Engineering

- Issues of Recruitment
 - 19 percent of SET jobs are held by women
- Issues of Retaining Women
 - Women leave SET jobs twice as frequently as men

Survey of SWE- NJ Members

- Research Questions
 - What factors encourage and discourage women from entering engineering careers?
 - What factors encourage and discourage women from remaining engineering careers?
 - What are the workplace experiences of women in engineering?

Early Experiences

- Parents as Role Models
- Teachers as Role Models
 - *My high school had a TV station and my mom encouraged me to join. The teacher (of the TV class) became my mentor and told me that if I wanted a technical career in television I should be an engineer. To this day that teacher is still my mentor.*

Early Discouragement

- Gender appropriateness of careers
 - *A high school counselor told me that I am a good Southern girl, why on earth would I want to become an engineer and go into the Air Force. My guidance counselor in high school thought/thinks I was/am nuts!*
 - *During my freshman year of college I was really struggling with my coursework, and my mom said that I should try nursing instead because it was more at my level. When I was struggling with the male dominated work environment, my dad suggested I should take up teaching.*

Gender Harassment

- *In college there were occasionally off handed comments by older professors, but nothing that set me back. I did have a professor call me the dutiful secretary of my project team.*
- *In college many guys made it clear they resented my being there. They would say ‘you’re taking space some qualified man could have, and everyone knows you’re only here to find a husband.’ My answer to them ‘of all the colossal conceit, what makes you think I’d go through four years of engineering school just to get one of you.’*

Isolation

- *I was the only female in mechanical engineering program during my entire four year college program. It made it very difficult, no one wanted to study with me or help me with problems.*

Increasing the Number of Women – Makes a Difference!

- *There were just two women in my year in the engineering program, we certainly had visibility...we were friends and studied together.*
- *I do remember engineering in college being mostly male, especially my electrical engineering classes. I do not remember ever feeling weird as one of a few girls---I had great girlfriends to study with.*

Workplace Issues

- Pay Inequity
- Ignored by Managers and Colleagues
 - *In the plant environment many times plant managers and floor supervisors would go to my technician to either validate what I said or ask questions that should be directed to me.*

Harassment

- *I have had many men that I have worked with ask me out on dates, and I believe keeping your private life away from the office is appropriate. When these men do ask me out I almost feel it is a form of harassment because how dare they put me in a situation that will result in me rejecting him and potentially hurting our working relationship as a result.*
- *I had a boss for a while who every time he would interview women for an engineering job would give me excuses for not hiring her like 'women don't like it when their shoes get ruined.'*

Work/Family Integration

- *It is hard to work with men who have a wife at home taking care of family issues. If you need to leave work early or work from home for things that their wives do, it has a bad perception. It is a very rigid work environment.*
- *I am single and find that if you want to do a good job, long hours are sometimes required, thus diminishing the amount of time available for fun.*

• *I worked for one small company in which I was the only mother employed. Both of the principals had wives who did not work after they had children. My children, at the time, were 6, 9, and 13. I was regularly cursed if I had to stay home with a sick child or leave work to take them to the doctor. I decided to find another job.*

• *I have moved into a less technical role to accommodate my life outside of work. In a technical role I would be traveling every week sometimes, and have very rigid hours (must be in by 8 am, cannot leave before 5 pm, and really was not culturally acceptable to leave before 7 pm. As a project manager [now] I still work long hours as I did but can occasionally work from home or shift my hours to fit family obligations. So moving to a less technical job has helped me integrate work and family demands.*

Ways to Encourage Young Women

- *I would take a young girl to a Society of Women Engineers meeting, introduce her to my friends and help her see the doors open to her through an engineering education. I would also take her to engineering competitions, and to a science/engineering place, like an amusement park, and explain the impact of engineers.*
- *Discuss and demonstrate some fun science projects in engineering. We have done this with the Girl Scouts demonstrating the fun side of engineering appears to make difference for girls.*