

# Women in Engineering

## International Women - Department of IMSE Graduate Program

According to the Harvard Business Review, thirteen percent of engineers in the workforce are women, and around the world there is a deficit of women in engineering careers. Less than one-third of industrial engineering graduate students are women nationally.

Here at the Department of Industrial, Manufacturing, and Systems Engineering (IMSE), the percentage of female graduate students in our program averages higher than in the work force and national industrial engineering university graduate programs, with one in three industrial engineering graduate students being women.

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Five of our department's current female graduate students recently shared the challenges they faced as international students in pursuing their educational goals.

Unsurprisingly, these women have faced a plethora of hardships and difficulties in their journey to obtain not only a higher education, but respect and support toward their educational goals.

Ph.D. student Sampa Halder from Bangladesh shared that in her home country, women striving for higher education and jobs in the engineering industry aren't held in the same regards as their male counterparts. "In my country, the girl in industry is not appreciated." It can be difficult to want to fight for higher education when respect mostly comes to those who take on more traditional roles.

"Most of the females I see in my country are not actually confident enough to pursue their career in the industry sector," Halder said. "You must be confident. You must believe in yourself. But sometimes being confident and believing is not enough. You must study and prove yourself."

This seemed to be a common theme that women are simply not as appreciated in important positions in many of these student's home countries.

Ph.D. student, Andria George, recalled that in her home country of India there is a substantial amount of gender inequality. "We [women] get a lot of gender discrimination," George said. "In many families some people [say things] like 'you are a girl, and you should not do this.'"

Marielena Molinares, Ph.D. student from Columbia, shared, "There were some occasions where I was the only woman in the classroom. Although, I don't think it is always more difficult to access education or be successful during your study, in industry it can be harder because of the gap in salary [between men and women.]"

According to Harvard Business Review, forty percent of women who earn an engineering degree either quit or never enter the profession. However, Molinares does have a positive outlook on a woman's role in the engineering industry. "We [women] are capable," Molinares said. "...Chances are [being] given, and I don't think that's just in engineering fields alone."

International female graduate students can face a lot of criticism from not only their own families, but their communities, friends, and peers to choose to stay home.

"Women that study in engineering could apply to study at a good university outside of Iran...they had a chance, but their parents didn't let them come here to study," said Sepideh Mohammadi, Ph.D. student from Iran.

Even employers must be convinced of a woman's competence before hiring them at times. For these women it can seem like the whole world is working against them. Halder states, "We literally have to convince the employer many times that we are fit, and we have the capability."

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Photo: Sara Wiechman

With the support of family, these students were able to overcome many of the pressures to take on more traditional roles as women.

“My acquaintances used to criticize my parents for allowing their only daughter to study in an unknown city,” Armina Mim, Masters Graduate Student from Bangladesh said.

She recalled how her father was one of her biggest supporters on her journey for higher education and described how this was uncommon in her home country.

Mohammadi shared that in high school, she discovered her love for engineering while reading her older brother’s engineering course books and decided to follow in his footsteps. “I started to read his books in industrial engineering and from that [moment] I was interested and decided to go in the same direction.”

Their stories serve as a beacon of hope for younger girls internationally and domestically that women are capable of accomplishing anything they set their minds to in overcoming any challenge to their educational goals.

“It makes me so confident to be an engineer as a woman,” Mohammadi shared, “When I go somewhere and tell someone I am an engineer, it makes me so confident.”

Here at the department we try to make sure all future domestic and international students, female or male, receive all the support and help they need to be successful in their studies.

Although it is possible to achieve anything you want to on your own, having a good support system can make the process all the better. We strive for excellence and equal opportunity for all.

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“The communication from the department of IMSE is so appreciated,” George said. “There are so many orientation programs that other departments didn’t have. I think that was really impressive to us as international students to eliminate worries about coming here. Once I got to know more about the department and felt how welcoming they are, I really like it.”