‘Rising Stars in EECS’ convene at MIT

Massachusetts Institute of Technology

On Nov. 1 and 2, nearly three dozen of the world’s top young female electrical engineers and computer scientists gathered at MIT to experience something rare: outnumbering men in the room.

The Institute’s Department of Electrical Engineering and Computer Science (EECS) invited the women to its inaugural “Rising Stars in EECS” workshop. Attendees came from MIT, Stanford University, the University of California at Berkeley, Cornell University, Carnegie Mellon University, the Max Planck Institute in Munich, École Polytechnique Fédérale de Lausanne in Switzerland and other research institutions to network with one another and with faculty from MIT and elsewhere. On the cusp of entering the workforce, these PhD candidates and postdocs came for guidance on launching careers as professors and to raise their visibility in the field of electrical engineering and computer science.

“You see so few women [in electrical engineering and computer science], it’s nice to see them all together,” said Lydia Chilton, a PhD candidate at the University of Washington who studies crowdsourcing and other aspects of human-computer interaction. “As I’ve gotten older I really value the female colleagues that I have. I feel like I interact with them more naturally.”

Floraine Berthouzoz, who works in computer graphics at UC Berkeley, is the only female doctoral candidate in a research group of about 20 people. “I’m at the end of my PhD, and I thought this was an amazing opportunity to meet other women interested in education and to get some advice,” she said.

While women’s representation in most science and engineering fields has increased substantially over the past 25 years, their participation in the fields of electrical engineering and computer science has been halting. A recent National Science Foundation survey [1] shows that women make up just 22 percent of PhDs in computer science. Moving up the ranks of academia, the numbers become even more stark: Women constitute a mere 10 percent of tenure-track faculty in the top electrical engineering academic departments, according to the National Academies [2].

“When you talk to search committees at different universities, one of the complaints is that there aren’t many applications from women,” said MIT’s Polina Golland, an associate professor in EECS who organized Rising Stars with the head of her department, Anantha P. Chandrakasan, the Keithley Professor of Electrical Engineering. They plan to hold the workshop annually.

Departments of electrical engineering and computer science at MIT and peer institutions are keen to add more women to academia’s pipeline by identifying potential candidates and encouraging them to apply for faculty positions, Golland said. She believes that the workshop was a significant step in the right direction.

It afforded a valuable opportunity, she said, for elite researchers to meet peers in the broad field of electrical engineering and computer science — outside the confines of their respective subdisciplines — and to be inspired by established women faculty.

Kristen Dorsey, a PhD candidate studying microelectromechanical systems at Carnegie Mellon, said: “Before attending [the workshop], I thought, ‘Well, I’d like to be a faculty member, but I don’t have what it takes. I don’t have the publication record, I don’t know what I’m doing.’” However, being invited to MIT and meeting women who have successful careers in academia gave her a measure of confidence, she said.

Dorsey and other attendees, including Jenna Wiens of MIT, added that meeting talented researchers from the wide variety of fields in electrical engineering and computer science exposed them to new possibilities for collaboration and professional support.

“It’s a great networking opportunity to meet other women who are interested in pursuing careers in academia whom I could forge relationships with early on — and then hopefully tap into that network later,” said Wiens, whose research focuses on machine learning and data mining.

That was precisely Chandrakasan’s vision when he began planning Rising Stars with Golland as part of his department’s 2012 strategic plan. He was inspired by the success that MIT’s Department of Aeronautics and Astronautics has had with a similar annual workshop for women. In his welcoming remarks, he told the invitees, “As you start thinking about applying for faculty positions, I hope you can use each other as a resource. This is a group I hope will stay together.”

MIT School of Engineering Dean Ian Waitz, who launched the AeroAstro women’s workshop in 2009 when he was head of that department, was also there to welcome the Rising Stars invitees, as was Cynthia Barnhart, MIT’s associate dean of engineering.

The workshop’s attendees shared their research during formal presentations and poster sessions on topics ranging from improving online video-streaming rates to tamper-proofing circuits to modeling the risk of infection among hospital patients. They networked over breakfast with senior women faculty from MIT, including National Medal of Science honoree Mildred Dresselhaus and Turing Award recipient Barbara Liskov. They also got a primer on how the promotion process works from a panel of faculty representing Harvard University, MIT, Boston University and the University of Rochester.

The issue of work-life balance arose at the panel on promotions and at occasional moments throughout the workshop. The panelists noted that it has become common policy at universities to adjust the “tenure clock” for women who have to take time off to care for infants, and that male faculty can and do take advantage of family-leave policies.

During the Q&A session with junior faculty, MIT’s Dana Weinstein, the Steve and Renee Finn Career Development Assistant Professor in EECS, pointed out that while being in a high-profile academic position keeps one very busy, “There is lot of flexibility in your schedule. You can have a life outside of work.”

Looking ahead to a career as a faculty member, Chilton was enthusiastic about other ways in which academia offers flexibility. “I like that it doesn’t preclude me from doing other things, such as a startup. And I really like being on the cutting edge. I feel like, even though I’m making things that aren’t immediately practical, they will be in five years.”

It is Chandrakasan’s and Golland’s bet that a cohort of passionate and talented women like Chilton will advance electrical engineering and computer science — not only through groundbreaking research, but by paving the way for a next, substantially larger generation of female engineers and scientists.

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