

Celebrating Education Week

SPOTLIGHT:

Andrea J. Goldsmith

2024 IEEE James H. Mulligan, Jr. Education Medal

Introspective by Andrea J. Goldsmith

Tell us about your research in wireless communication. Why this field?



My undergraduate major was engineering math, and I was drawn to communications classes due to the beautiful theory that underpinned communication system design. But I really fell in love with wireless communications after college, when I worked for a small defense communications company in the mid-1980s, just as the first analog cellular systems were rolling out. We were working on satellite communications and multi-antenna beamforming, which was a precursor to the MIMO systems so prevalent today. Building wireless systems captivated my imagination about how this technology might transform so many aspects of our lives. That fascination has never waned over all the decades I have worked in the field.

You have been a professor for several decades. What have you learned as a professor over the years?

The best part of being a professor is working with brilliant students and postdocs. I have learned so much from them, the questions they ask, the new ideas they propose, and the creative and diverse approaches they use to solve hard problems. I have also learned to follow my passion in terms of the research problems I pursue – to not be afraid to take on new areas or hard problems. That makes it more fun and the work more impactful.



Mentorship is very powerful to students, and you have talked about how your mentor was instrumental in your career. How do you approach mentorship?



Mentoring young people is one of the most rewarding aspects of my career. My approach to mentoring is to first learn the strengths, aspirations, and passions of my mentee, and then work to help them achieve their full potential. For my Ph.D. students and postdocs, I like to give them a lot of freedom so they can experience the satisfaction of defining the research problem they want to work on, and then solving it.

Your leadership and contributions to education have earned you IEEE's highest education award—the IEEE James H. Mulligan, Jr, Education Medal—what does this mean to you?

This award is particularly special since it comes from educating my students and postdocs – the people who have made my academic career so satisfying and joyful. Teaching and mentoring this amazing group of scholars, and watching their spectacular professional trajectories, has been the pleasure and honor of a lifetime.

How has the IEEE community impacted you over the years?

IEEE has been my professional home throughout my career and is also where many of my most treasured friendships have been forged. I am grateful to the IEEE leadership, volunteers, and members for creating this special organization that has contributed so much to my professional development and that of so many others.

Andrea will be part of the Welcome Reception panel at Akamai ahead of the IEEE VIC Summit in Boston, MA, this May. You can read her full bio [here](#).