

# A LETTER FROM THE DEPARTMENT HEAD

Greetings from MIT! This has been an exciting year for EECS as we celebrate our community's achievements. We've developed new courses on in-demand topics, increased opportunities for research and entrepreneurship, and expanded efforts to enhance student and postdoc experiences. Following are several highlights from the past year, all explored in more depth in this publication's pages.

## Undergraduates as Researchers: SuperUROP

SuperUROP is a program designed to provide a more in-depth experience for juniors and seniors who have already completed a traditional undergraduate research opportunity program (UROP) project. Through participation in graduate-level research, and weekly guest lectures from distinguished speakers, the year-long program prepares students for work in academia, industry, and start-ups. The 12-credit Seminar in Undergraduate Advanced Research (6.UAR), offered in conjunction with SuperUROP, teaches students valuable technical communication skills. Each student is eligible to receive a named stipend that is generously funded by gifts from industry sources and alumni. In the 2016-2017 academic year, more than 140 students completed SuperUROP projects. Launched by EECS in 2012, the SuperUROP is now offered to all School of Engineering (SoE) departments.

## Ongoing Dialogue Between Students and EECS Leadership: USAGE

The department continues to benefit from the regular input of the Undergraduate Student Advisory Group in EECS (USAGE), which I formed in the 2011-2012 academic year as part of the department's strategic planning process. I'm grateful to this year's 30-plus USAGE members, who shared their thoughts on everything from faculty advising to training for teaching assistants, met with our biennial Visiting Committee, and helped design the recently reopened EECS student lounge.

## LEADERSHIP UPDATE

As this issue of the Connector went to press, Anantha Chandrakasan was named Dean of the MIT School of Engineering, effective July 1, 2017. Chandrakasan succeeded Ian A. Waitz, who became MIT's vice chancellor. A new EECS department head is expected to be named this fall. Asuman Ozdaglar, associate department head, will serve as interim department head during the search. For details, visit [eecs.mit.edu](http://eecs.mit.edu) or [news.mit.edu](http://news.mit.edu).



Anantha Chandrakasan

## Entrepreneurship: StartMIT

Now in its fourth year, StartMIT is designed to shorten the learning curve for aspiring entrepreneurs, teaching them about startup culture and ethics, effective team-building, intellectual property issues, value propositions, and more. The program includes an intensive for-credit workshop held during MIT's winter Independent Activities Period (IAP) and site visits to startups and other companies.

This year's StartMIT students and postdocs heard from nearly 70 leading innovators. Students learned to develop and pitch their ideas, refined their projects in hands-on activities, and met with MIT alumni and other entrepreneurs.

During the 2017 spring break, some StartMIT participants traveled to California, where they visited leading San Francisco and Silicon Valley companies and networked with MIT alumni and local professionals. In addition, StartMIT students can leverage the MIT Sandbox Innovation Fund, a program offering tailored educational experiences, mentoring, and seed funding of up to \$25,000 for qualified teams.

## Entrepreneurship: The Engine

MIT established The Engine, an initiative that combines an accelerator, a network of facilities and experts, and a fund that will provide startups with stable financial support and access to costly resources. The Engine, which was announced in October 2016, closed its first investment fund of \$150 million in April 2017. It will focus on startups that are developing "tough" technologies — such as robotics, manufacturing, energy, and biotech — which need time to commercialize. Charged by Provost Martin A. Schmidt, I led several MIT Working Groups focused on the development of Institute policies and procedures related to working with The Engine. Expect to hear much more about this exciting initiative in the coming months and years.

## Building Communication Skills: Comm6 Initiative

Effective communication skills are in high demand among employers today, so we continue to strengthen our offerings in that area. All EECS students have access to the department's Communication Lab, where 10 peer advisors provide free coaching and feedback. Since September 2016, more than 250 students have visited the lab for assistance with everything from giving oral presentations to formatting their resumes, and more than 270 have attended workshops on posters, pitches, proposals, and other topics. We expect demand to keep growing here as well.

## Enhancing the Postdoc Experience: Postdoc6

Through our Postdoc6 initiative, we've been increasing mentoring and networking opportunities for the postdocs who work in the four EECS-affiliated labs. Several times annually, we offer two-day offsite workshops to help small groups of postdocs learn leadership, management, and communication skills. In collaboration with the four labs, we offer regular social hours to help postdocs meet their colleagues. Feedback has been extremely positive, and future postdocs will benefit from these offerings as well.

## Education, Research, Faculty News

In this issue, you'll find articles on several EECS courses covering high-profile topics such as machine learning, mobile and sensor computing, and the Internet of Things, along with updates on the department's new undergraduate curriculum and computer science minor. You'll also find updates from researchers in the four EECS-affiliated labs, introductions to new faculty, details on appointments to professorships and career-development chairs, and an impressive list of our faculty's latest awards, honors, and achievements.

Sadly, the department lost two giants this past year. The Faculty Focus section includes tributes to Institute Professor Emerita Mildred Dresselhaus, and to communication and computing pioneer Robert Fano, the founding director of Project MAC, which evolved into today's Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT.

## EECS Alumni News

A special highlight of this issue is the collection of stories about EECS alumni (including Advanced Micro Devices CEO Lisa Su, a three-time alumna, who served as guest speaker

for MIT's 2017 PhD hooding ceremony). I hope you'll enjoy these accounts of some truly remarkable members of the EECS community.

## EECS Leadership

Last year, I announced that I would be stepping down as department head, but have stayed on at the request of SoE Dean Ian A. Waitz to address some key issues facing the department. It has been a pleasure serving the department over the past year, collaborating with associate department heads Nancy Lynch and Asu Ozdaglar, who succeeded Silvio Micali and David Perreault in those roles. Nancy and Asu have had a busy year, contributing to the department in many ways, and in particular with the hiring of new faculty.

## Diversity in Enrollments

EECS enrollments continue to set new records, in terms of both numbers and diversity. A total of 1,270 undergrads enrolled for Fall 2016 (up from 1,205 the previous year); of these, 39 percent are women and 12 percent identify as under-represented minorities (URMs). Thirty-three percent of this year's MEng students are women. Of the 118 SM/PhD students who joined the department in Fall 2016, 21 percent are women and 5 percent identify as URMs. Finally, among 613 total graduate students for 2016-2017, 21 percent are women and 58 percent hold international citizenship. I'm also pleased to note that, for the fourth consecutive year, our entire entering graduate class received financial assistance via fellowships, research or teaching assistantships, or EECS-provided support.

As always, we're eager to hear from EECS alumni, supporters, and friends, especially in exploring ways for you to share your expertise with current students and faculty. I welcome your input. Please stay in touch directly or through our website and other social-network channels.

Sincerely,

## Anantha P. Chandrakasan

Vannevar Bush Professor of Electrical Engineering and Computer Science  
Department Head, MIT Electrical Engineering and Computer Science

## YOUR TURN

We'd love to hear your feedback on and story ideas for the Connector. Which articles did you most enjoy? What suggestions do you have for future features or profiles? Would you prefer to read future Connectors in print or online or both? Please send your thoughts to [eeecs-communications@mit.edu](mailto:eeecs-communications@mit.edu). Thank you!

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