



# TALK SCIENCE TO ME

The EECS Communication Lab offers open-source, real-time, peer-to-peer help for students and postdocs.

By Alison F. Takemura | EECS

Photo: Gretchen Ertl

**I**n the spring of 2015, graduate students communicated a clear message to the Department of Electrical Engineering and Computer Science (EECS): They wanted help communicating.

Specifically, they wanted to give better pitches for research and startup ideas and make presentations that wowed their colleagues and senior scientists. They also wanted to impress recruiters, who, mentors said, always saw plenty of candidates with technical skills; it was the applicants with strong communication skills who really stood out from the pack.

Students were particularly stressed during conferences, when they realized their talks weren't what they could be, recalls Samantha Dale Strasser, a PhD candidate in EECS, who was among the graduate students who provided the 2015 feedback. "Coming from MIT, we really want to be not only at the forefront of science, but also the forefront of communicating that science," she says.

In response, the department launched two initiatives: the EECS Communication Lab, a peer-coaching resource, and a new lab-supported class, Technical Communication (6.S977). By all accounts, both initiatives have succeeded, resulting not only in improved posters and pitches, but in a stronger department-wide awareness of the power of effective communication as well.

The Comm Lab, as it's affectionately known, employs graduate students and postdoctoral associates from across EECS to serve as peer coaches. They're trained in strengthening their own communication skills, including how to consider their audience and purpose, motivate their research, and create a narrative, rather than a litany. Then these skilled communicators, or communication advisors, are ready to provide advisees with one-to-one help. Advisees might be anyone in the department, including undergraduates, graduate students, and postdoctoral associates.

"The Comm Lab is a great resource," says Priyanka Raina, a PhD candidate in EECS. She consulted the lab for a wide range of assignments: a conference paper, a presentation, her resumé, and a faculty package. "It helped me a great deal," she says. "All the assignments that I worked on with the lab were accepted or saw positive results. I even got an interview with a top university."

The EECS Comm Lab is the latest installment of the Communication Lab program, a School of Engineering (SoE) resource, affiliated with the Gordon-MIT Engineering Leadership Program. The Departments of Biological Engineering and Nuclear Science and Engineering also have their own communication labs. The model has expanded quickly because it serves students when they need it most, notes Jaime Goldstein, the program's former director.

"Early scientists need to get funding, get a job, go to conferences, and meet collaborators," she says. "We insert ourselves at just that right moment with just the right information. And peer coaches know how to ask the right questions because they're insiders in the field. It's a real recipe for success."

Faculty members agree. In addition to that first Technical Communication class, the Comm Lab has hosted workshops and supported other courses. In January 2017, the Comm Lab provided a training session for graduate students presenting at the Microsystems Technology Laboratories' (MTL) Microsystems Annual Research Conference. "Industry members and faculty commented that the quality of pitches showed marked improvement this year," says Ujwal Radhakrishna, a postdoctoral associate in EECS who organized the conference.

Research abstracts and presentations in Introduction to Numerical Simulation (6.336) have also been notably clearer

than in the past. “The abstracts felt a lot better organized, with engaging motivations, detailed concise methods and results descriptions, and thoughtful considerations at the end,” says Luca Daniel, the EECS professor who instructed the Comm Lab-supported class. “The presentations were also more accessible to a wider audience. My class has students from 12 different departments, so that’s essential.”

Daniel wasn’t the only one enthusiastic about the Comm Lab results in his course. When he asked whether he should again use the resource in his course, his students responded with an emphatic “yes,” he says. Students also suggested adding midterm deadlines, in addition to deadlines for final abstracts and presentations, to encourage even earlier visits to the Comm Lab. “They love the fact that it is other students helping them,” Daniel says.

Diana Chien, the new director of the SoE-wide Communication Lab program, understands the appeal. “In technical communication, you really can’t separate the science or engineering from the communication, so our advisors are ready to tackle both at once,” she says. When EECS clients visit the Comm Lab to, for instance, work on conference presentations with communication advisors, they’re really connecting with peers — people who are “as ready to parse details about the design of a machine-learning algorithm as they are to ask strategic questions about audience and storytelling,” Chien says.

Chien and the communication advisors also created an online resource, the CommKit, to guide students through several common communication tasks, such as a cover letter or a National Science Foundation (NSF) application. If an impending deadline precludes students from meeting an advisor in person, help is still just a click away.

The Comm Lab’s popularity is mounting. Since September 2016, it has provided more than 250 appointments with 150-plus advisees. More than 270 students attended workshops on posters, pitches, thesis proposals, and the Research Qualifying Exam (RQE). Feedback from the Comm Lab’s first annual

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survey showed that of the respondents who had visited the lab, all would recommend it to a friend. And while many students and postdocs haven’t yet used the lab, more than three quarters of non-users surveyed indicated they were still glad that EECS offers the service.

“The enthusiastic and sustained interest from students and faculty tells us the program’s doing exceptionally well,” says Anantha Chandrakasan, the Vannevar Bush Professor of Electrical Engineering and Computer Science and EECS department head. “I expect the Comm Lab will become a staple resource in the department.”

Skills taught in the Comm Lab have a clear professional impact, says Chris Foy, a PhD candidate in EECS who took the communication course and is now a peer coach. He ranks the Technical Communication class as one of his favorites at MIT, in part because it taught him how to focus on building a rationale or a narrative about his research. “Being able to do this is crucial as a scientist because there are so many problems that are, in theory, worth solving,” he says. “But if you can’t construct a story around why you chose this problem,” he adds pointedly, “then why are you solving it?”

Joel Jean, a PhD candidate in electrical engineering, credits his communication-advisor training with helping him clearly explain his vision for working on thin-film solar cells to help address climate change. That effort paid off: Jean won one of MIT’s most prestigious graduate awards, the Hugh Hampton Young Fellowship. “My return on investment from working with the EECS Comm Lab as an advisor has been extraordinarily high,” he says. “And I expect its value, both for me and for students in the department, to keep growing.”

*Editor’s Note: Alison F. Takemura is the administrator for the EECS Communication Lab. To learn more:  
SoE Communications Lab: [mitcommlab.mit.edu](http://mitcommlab.mit.edu)  
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Trained student advisors coach their peers in the EECS Comm Lab. Photo: Alison F. Takemura