

## **Program in Science, Technology, and Society**

The Program in Science, Technology, and Society (STS) helps MIT offer an education that teaches scientists and engineers to engage the social and cultural dimensions of their work at the highest levels. This education sets MIT apart from the numerous engineering schools worldwide that turn out technical specialists. The STS Program continues to distinguish itself as the leading department, and graduate program, of its kind in the United States.

### **Educational Activities**

#### **Undergraduate**

In academic year 2017, 82 students from 22 different majors were active STS concentrators. Three students (two in Course 20 and one in Course 3) worked on their minor in STS and Thomas Cowan completed a double major in STS. Thomas's thesis, "Network Control in a Globalized World: How Visa and Swift's Founding Structures Serve Their Stakeholders on the International Stage," was supervised by Assistant Professor William Deringer. Three students worked with us on Undergraduate Research Opportunities Program (UROP) projects. Professor Emeritus Louis Bucciarelli supervised two students who worked on engineering studies projects, and a freshman who is planning to double major in STS worked on her project, "Popular Science and Science Fiction Fan Cultures of the 1890s," with Professor Rosalind Williams.

Deringer served as STS's undergraduate officer this year and worked with Williams on the STS Curriculum Committee to identify areas of strength and areas for improvement in the curriculum. The committee researched STS programs beyond MIT, interviewed faculty and students, and presented findings at the end of the year at an STS faculty meeting. A forthcoming report will provide recommendations for future implementation; most immediately we implemented a change to our minor and major programs by replacing subject STS.091 Critical Issues in STS with STS.004 Intersections: Science, Technology, and the World.

#### **Subjects and Enrollment**

STS offered 22 undergraduate subjects and 22 graduate subjects in AY2017, including seven Communication-Intensive in the Humanities, Arts, and Social Sciences (CI-H) subjects. We continue to emphasize collaboration with other areas of MIT and offered 17 subjects jointly with the following departments, institutes, and programs: Aeronautics and Astronautics; Anthropology; Comparative Media Studies/Writing; Data, Systems and Society; Electrical Engineering and Computer Science; Global Studies and Languages; Health Sciences and Technology; History; Linguistics and Philosophy; Physics; Political Science; and Women's and Gender Studies.

We offered four new undergraduate and four new graduate subjects this year. These included undergraduate subjects STS.088 Africa for Engineers and STS.012 Science in Action: Technologies and Controversies in Everyday Life, and graduate subjects STS.412 Quantification and STS.450 The Global History of Medicine and Public Health.

Undergraduate enrollment totaled 508 students, which included majors from 27 different MIT departments and students from Harvard University and Wellesley College. The three majors with the largest representation were Electrical Engineering and Computer Science (Course 6), Physics (Course 8) and Mechanical Engineering (Course 2). First-year students were highly represented in our classes, with an enrollment of 89 over the year. Graduate enrollment totaled 189 students from 26 different programs, including Aeronautics and Astronautics, Architecture, Management, Mechanical Engineering, and Urban Studies and Planning, as well as the Advanced Study Program and programs at Harvard.

### **Doctoral Program**

The doctoral program in History, Anthropology, and Science, Technology, and Society (HASTS) is run by STS with collaboration from the History faculty and the Anthropology Program. The program is administered by STS, which awards the degrees. Professor Christine Walley (Anthropology) continued to serve as director of graduate studies through the end of this academic year.

The HASTS program received 155 applications for September 2017 admission. While down very slightly from last year, we still had the second largest pool of applications in the history of the program. We offered admission to 5.8% of the applicants and had a 55.6% yield. This group of incoming students holds undergraduate degrees in anthropology, law, and physics, and three of them have completed master's degrees.

In 2016–2017, 38 students were enrolled in the graduate program, including eight who graduated between September 2016 and June 2017. All eight went on to postdoctoral or teaching positions at the following schools soon after graduation: Amherst College; Harvard University; Northwestern University; MIT; University of California, Berkeley; and University of Pennsylvania. Three of our recent alumni accepted tenure-track faculty positions this spring at Johns Hopkins University, the University of Virginia, and Yale University. Another recent alum became a curator of space history at the Smithsonian National Air and Space Museum this year.

### **Projects, Grants, and Initiatives**

In the spring, doctoral student Clare S. Kim was awarded a Doctoral Dissertation Improvement Research Grant (DDIRG), titled “Manifold Exchanges: Mathematics, Aesthetics, and Modernism in America, 1920–1960,” by the National Science Foundation (NSF). Professor David Kaiser serves as the principal investigator (PI).

The three-year NSF project led by Kaiser entitled “INSPIRE: Testing Bell’s Inequality with Astrophysical Observations” completed its second year during FY2017 and will continue until August 31, 2018.

Professor Emeritus Louis Bucciarelli received a two-year grant from the National Science Foundation to support a collaborative research project entitled “Liberal Studies in Engineering—Broadening the Path to the Profession: Feasibility Study.” The project will continue for another year.

The NSF DDIRG for doctoral student Lucas Mueller, entitled “Breaking the Toxic Mold: Aflatoxin and the Making of Cancer Research in the Postcolonial World, 1960–2015,” ended in January 2017. Professor Kaiser served as the PI.

Kaiser also served as PI for a Marie Curie Fellowship from the Universitat Autònoma de Barcelona that supported Dr. Massimiliano Badino. The project was entitled “Order/Chaos: Genealogy of Two Concepts in the Culture of European Mathematical Physics,” and ended in October.

### **Ongoing Program Activities**

Ongoing STS activities bring a wide variety of distinguished scholars to the MIT campus on a regular basis. The longest running of these activities is the STS Colloquium series. Each colloquium focuses on a substantial, pre-circulated paper, and features both the paper’s author and a separate commentator.

In AY2017, STS held seven colloquia, bringing 14 distinguished speakers to campus. Speakers hailed from University of Wisconsin, Harvard University, University of California, Santa Barbara and UC Riverside, Binghamton University, Fordham University, University of Toronto, Cornell University, Stanford University, Princeton University, Columbia University, and University of Chicago. They spoke on a breadth of topics ranging from “Can Animals Predict Earthquakes?” to “Science and Its Stories” and “Nuclear Optics.” We also hosted three special seminars in connection with an ongoing senior faculty search.

In the fall, STS hosted a special screening of the documentary film *Containment*, organized by Assistant Professor Robin Scheffler and Professor Deborah Fitzgerald. Directors Peter Galison and Robb Moss, both from Harvard University, were in attendance and held a question-and-answer session at the end of the movie. The event was open to the public and attracted scholars from across campus, Cambridge, and Boston

The Benjamin Siegel Prize of \$2,500 is awarded annually to the MIT student submitting the best-written work on issues in science, technology, and society. The prize is open to undergraduate and graduate students from any school or department. This year’s committee awarded the 2016–2017 prize to HASTS graduate student John Tylko for his paper entitled “When Inspiration Yielded to Calculation: Technology and Politics of the SST [Supersonic Transport] in the New Frontier.”

The annual Arthur Miller Lecture on Science and Ethics was held in March. This year’s lecturer, Professor Keith Wailoo of Princeton University spoke on “The Politics of Pain: Medicine, Social Difference, and Gatekeepers of Relief America.” His lecture attracted a large audience from MIT and beyond.

### **Knight Science Journalism Fellowship Program**

AY2017 at the Knight Science Journalism (KSJ) fellowship program was an exciting one of continued reorganization, growth, and expansion, building on KSJ director Deborah Blum’s first year (AY2016) leading the program. Notable developments included bringing on board in July the program’s first associate director, David Corcoran, the

former editor of Science Times at *The New York Times*, to help lead the program and the hiring in May of a talented marketing director, Anar Badalov, to promote both the program and its new and increasingly high-profile digital science magazine, *Undark*.

Blum, Corcoran, and *Undark* editor Tom Zeller, worked to select the 34th class of Knight Fellows—a group of 10 distinguished journalists chosen from a competitive pool of close to 140 applicants. The 2016–2017 fellows were Iván Carrillo Pérez, Chloé Hecketsweiler, Robert McClure, Maura O’Connor, Rosalia Omungo, Meera Subramanian, Fabio Turone, Bianca Vázquez Toness, Lauren Whaley, and Mark Wolverton.

In addition to auditing courses at MIT and Harvard, the Knight Fellows engaged in an extensive curriculum of seminars, workshops, tours, and field trips designed to introduce them to top researchers and research sites in New England and to boost their media production skills. KSJ hosted more than 40 semiweekly science and journalism skill seminars over the course of the year featuring a roster of distinguished speakers, including leading scholars from MIT and Harvard such as Noam Chomsky, Heidi Williams, Jody Freeman, Daniel Schrag, Marah Gubar, and Claude Canizares, and a range of nationally recognized journalists and authors, from the acclaimed author of *I Contain Multitudes* Ed Yong to national science correspondent at National Public Radio Richard Harris to noted genetics columnist for *The New York Times* Carl Zimmer.

The program also began organizing Kavli Foundation–funded workshops on issues in science journalism. The first, in July on the blurring of the lines between science journalism and science communication, explored differences and similarities in training and story telling between the two perspectives. Nearly 40 scholars and journalists attended the meeting, in addition to representatives from Kavli, the Simons Foundation, the Gordon and Betty Moore Foundation, and the National Science Foundation. Based on recommendations arising from the conference, the three foundations are now collaborating on a new project to better train scientist communicators. The second Kavli conference explored the need to better train editors who handle science stories. Held in mid-November, it brought together almost 30 editors, journalists, foundation representatives, and scholars. The symposium identified such an acute need for better training of science editors that the Kavli Foundation agreed to fund two additional symposia on the subject. The first of those workshops was held in late June 2017. With a long-term goal of building resources and a network for science editors, it brought together editors from such diverse publications as *Science News* and the *Idaho Statesman* for a meeting that mixed both discussion and dedicated training sessions. The second such conference is scheduled for late October 2017.

KSJ also organized three all-new training workshops for the fellows. Columbia University’s Duy Linh Tu taught one on mobile photography, former KSJ fellow and current Columbia University adjunct Iby Caputo taught one on podcasting and audio story telling, and two statisticians working with the nonprofit Sense about Science taught one on statistics for journalists. Fellows also went on field trips to the Jackson Laboratory and the MDI Biological Research Laboratory, in Bar Harbor, Maine, and to the Marine Biological Laboratory in Woods Hole, Massachusetts. In addition, they received travel support that enabled them to attend a conference of their choosing, ranging from the

National Association of Science Writers meeting in San Antonio, Texas in October to the American Association for the Advancement of Science meeting in February in Boston, to the March conference on narrative journalism hosted by Boston University.

The program's magazine, *Undark* celebrated its one-year anniversary in April with a reception and climate change event as part of the 11th Cambridge Science Festival. The event served as a debut of a climate change film published and produced by *Undark* that has since gained national attention, appearing on the websites of both *Mother Jones* and Bill Moyers. That attention derived in part from the outstanding work of our new marketing director, who is tasked with raising the profile and influence of both the magazine and the KSJ program. Zeller continues to direct the magazine to new standards of excellence; this year it won a national public health reporting award from the Association of Health Care Journalists. He is joined on the staff by associate editor and fact checker Jane Roberts and book editor David Corcoran. (Corcoran also manages the KSJ website [updated this year] and seminar series but devotes about a third of his time to the magazine as well). Corcoran and Roberts also coordinate on a program we started last year to provide paid internships to MIT graduate students in science writing, during which we train them in fact-checking as well as work with them on short writing assignments.

The Knight Science Journalism program is supported by an endowment from the John S. and James L. Knight Foundation, and by additional alumni and foundation gifts.

### Faculty Activities

In AY2017, Assistant Professor Dwaipayan Banerjee completed the first year of his appointment at MIT. He continued his active membership at the American Anthropological Association, presenting new research on the politics of blood circulation in India at the association's annual conference in Minneapolis. He also attended the Annual Conference on South Asia at the University of Wisconsin–Madison, participating in a newly formed collective of faculty who research the social contexts of science and technology in the region. At Madison, he presented his work on cancer and urban poverty in Delhi.

Banerjee also continued his service to the discipline, serving as a peer reviewer for the flagship journals of anthropology: *American Ethnologist*, *Medical Anthropology*, and *Cultural Anthropology*. He contributed a research article titled "Markets and Molecules—A Pharmaceutical Primer from the Global South" to *Medical Anthropology*, the premier journal of the subfield. Banerjee also made significant progress on two book manuscripts he is working on. He finished the first draft of *Hemopolitics*, a book co-authored with Dr. Jacob Copeman of the University of Edinburgh, and is sending it for review to university presses. He also made significant progress on his first monograph, "Living in Doubt: Cancer and Pain in Contemporary India." He intends to have the first draft of the manuscript ready for review in 2018.

He taught two courses, one at the graduate and the other at the undergraduate level. His graduate subject, STS.418 Science and Technology in South Asia: Perspectives from History and Anthropology, introduced a new regional focus to the department. His entry-level undergraduate subject, STS.012 Science in Action: Technologies and

Controversies in Everyday Life, explored a range of controversies about the role of technology, the nature of scientific research, and the place of politics in science. His year ended with developing the upcoming year of department colloquia on the theme of science in the global south, as well as with developing curricula for a team-taught advanced graduate course (across MIT and Harvard) on the same subject.

William Deringer completed his second year as a member of the STS faculty in AY2017, and his first year as Leo Marx Career Development Assistant Professor. During the year, he completed final revisions on his first book manuscript, *Calculated Values: Finance, Politics, and the Quantitative Age*. He submitted the final manuscript to Harvard University Press in June 2017; it is currently in production and is scheduled for publication in February 2018. In addition, he published two research articles: “Pricing the Future in the Seventeenth Century: Three Calculating Technologies,” part of a forum on “The Paper Technologies of Capitalism” in the April 2017 issue of *Technology & Culture*, and “‘It Was Their Business to Know’: British Merchants and Mercantile Epistemology in the Eighteenth Century,” published in the June 2017 issue of *History of Political Economy*, a special issue on “The Contributions of Businesspersons to Economics.” In addition, he continued work as co-editor (along with Lukas Rieppel of Brown University and Eugenia Lean of Columbia University) of an edited journal volume on “Science and Capitalism: Entangled Histories,” to be published as the 2018 edition of *Osiris*. As part of that volume, Deringer also crafted a new article entitled “Compound Interest Corrected: the Imaginative Mathematics of Financial Time in Early-Modern England.” Both that article and “Pricing the Future” are part of a larger, book-length project that he is undertaking—tentatively titled “Discounting: A History of the Modern Future (in One Calculation)” —that examines the history of a crucial kind of calculation, “present value,” from its roots in early-modern finance through 21st-century debates about climate change economics. During the year, Deringer presented new research related to that “Discounting” project at seminars at the University of Virginia and the Harvard Kennedy School of Government, and the annual meetings of the Society for Social Studies of Science, History of Science Society, and Society for the Advancement of Socio-Economics.

At MIT, Deringer taught the undergraduate subject STS.002 Finance and Society for the second time, and initiated a new graduate seminar, STS.412 Quantification. He also served as the STS Program’s undergraduate officer and as co-chair (with Williams) of a curriculum review committee that conducted a comprehensive review of the undergraduate education program in STS. In addition, he served on the graduate admissions committee for the HASTS PhD Program. Finally, during the past year, Deringer applied for and received a fellowship at the Shelby Cullom Davis Center for Historical Studies at Princeton University. He will spend next year there on leave from MIT carrying out research on his “Discounting” project as part of the Davis Center’s 2017–2018 theme on “risk and fortune.”

Professor Michael Fischer taught two subjects in the fall term, and was a co-convenor of the weekly Joint MIT-Harvard (“Friday Morning”) Seminar in Medical Anthropology (now running for 40 years). He serves as a PI on a Singapore University of Technology and Design International Design Center (SUTD IDC) grant, under the terms of which he

spent the spring term in Singapore at SUTD. Under that grant he supported two of our graduating HASTS students, and is beginning to support a third. He is a co-PI on the \$15 million Hewlett-Packard Foundation grant on cybersecurity led by Daniel Weitzner and Hal Abelson, under which another HASTS graduate student has been supported. He chaired two dissertations that were completed this year, served on two others that were completed this year (one at the National University of Singapore, one at MIT). He serves as advisor and chair on two other continuing dissertation committees and serves on three more HASTS dissertation committees, as well as one at Harvard. He supervised a postdoc, as well as one of the SUTD faculty members who came to MIT as part of the “Teach the Teachers” program.

Fischer serves on four editorial boards: *East Asian Science, Technology and Science* (EASTS, Duke University Press); *Science, Technology and Society* (Sage); *Cultural Politics*; and *Cultural Anthropology*. He continued to co-edit the leading STS book series, *Experimental Futures*, at Duke University Press, which has now published more than 30 titles and has more in the pipeline. His book *Anthropology in the Meantime: Experimental Ethnography, Theory and Method for the Twenty-First Century* was revised and accepted by Duke University Press. He has published one book chapter, three articles in peer-reviewed journals, and has had a review essay accepted. He gave a keynote address at an international conference in Indonesia, three posters at the IDC Summit, a formal colloquium at SUTD/Singapore, and two panel presentations at book launches in Singapore.

This year, Professor Deborah Fitzgerald continued to be active as a scholar, a teacher, and a citizen of the Institute and profession. She is working on her book about transformations in eating and farming during World War II. As a part of this, she is working on an invited paper for a special issue of the history of science journal *Osiris*. She is also preparing a paper for an invited session at the European Rural History Conference in Belgium in September 2017, and has been invited to participate in a roundtable at the American Historical Association annual meeting in January 2018. Recently, she was asked to participate in an online roundtable on agriculture and science and will continue for the next six months. She chaired and commented on sessions at the Environmental History Society annual meeting and that of the Agricultural History Society, and served as a commentator on a paper at the Hagley Center for the History of Business, Technology, and Society. Fitzgerald gave a lecture at University of Findley in Ohio as a Distinguished Lecturer of the Organization of American Historians. She spoke on a panel on food history at the Smithsonian Institution. Finally, she joined the Editorial Board of the journal *Technology and History* and has reviewed three scholarly books in the past year.

Fitzgerald taught two classes this year. In addition, she served on a doctoral committee, mentored two pre-doctoral students (one from Aalto University in Helsinki, the other from University of California, Davis) as well as one visiting scholar from Brazil.

Professor Fitzgerald participated in the admissions process for the HASTS doctoral program and co-chaired the STS colloquium committee. She also began serving on MIT’s Committee on Open Access. Beyond the Institute, she has written for two outside tenure cases, served as a referee for the Radcliffe Institute for Advanced Study at Harvard University, served as one of five senior scholars in an all-day graduate workshop at the

Agricultural History Society meeting, and refereed manuscripts for various journals. She published an opinion piece in the *Chronicle of Higher Education* (“The Hallways are Too Quiet”) and is finishing another on retirement (“Retirement: It’s Not About You”).

During the 2017 academic year, Professor David Kaiser continued to work on novel experimental tests of quantum theory. His work with Associate Professor Joseph Formaggio of the Department of Physics and two MIT students, published in *Physical Review Letters*, used data on neutrino oscillations from the Fermilab-based MINOS collaboration to demonstrate that neutrinos make the 750-kilometer journey between source and detector in a genuine quantum superposition state, rather than displaying behavior that would be consistent with classical physics. In addition, together with Professors Alan Guth (Physics) and Anton Zeilinger (University of Vienna), Kaiser continued to help lead the international “cosmic Bell” collaboration, with support from the NSF and the Austrian Academy of Sciences. The group published an article in *Physical Review Letters* on its first experiment, which demonstrated a statistically significant violation of Bell’s inequality while addressing the so-called “freedom-of-choice” loophole in a novel way, using real-time astronomical observations of Milky Way stars. The work was featured as an “Editors’ Suggestion,” and also garnered attention in venues ranging from *Nature* to *The Atlantic*, *CBS News*, and the “Physics Girl” YouTube channel.

Kaiser continued to co-advise the Density Perturbations Group with Guth in MIT’s Center for Theoretical Physics, as part of which he completed three new research articles on cosmology with several students conducting UROP projects. He published popular essays in the *New Yorker*, *Nautilus*, and *Scientific American* magazines, and an invited comment essay in *Nature*. In association with the cosmic Bell project, Kaiser also helped to lead an extensive public-outreach program with colleagues at the MIT Museum and the Central Square Theater, including commissioning an original one-act play about quantum entanglement, whose free performances in the MIT Museum have now been seen by nearly one thousand people, and a new museum exhibit about the cosmic Bell experiments, which features three interactive installations by MIT students. Kaiser hosted and spoke at a series of events at the MIT Museum to help launch the cosmic Bell outreach program, including a “SoapBox” series on cutting-edge questions in quantum theory, particle physics, and astrophysics. He also delivered nine invited colloquia and public lectures, including featured talks at two Boston-area “Instant Expert” events organized by *New Scientist* magazine, and co-organized the first annual New England Theoretical Cosmology and Gravity Workshop, which included 90 participants. Kaiser chairs the Editorial Board of the MIT Press, serves as an associate editor of *Historical Studies in the Natural Sciences*, and serves on the advisory boards for *Nautilus* and *Undark* magazines. He served on the external visiting committee for Harvard’s Department of the History of Science and on the Alumni Advisory Board for the Department of Physics and Astronomy at Dartmouth College. He served as the principal advisor for four postdoctoral scholars (two in STS, two in Physics), four PhD students (three in HASTS, one in Physics), and as a dissertation committee member for another six PhD students (four in HASTS, two in Harvard’s Department of History of Science). He continues to serve as an advisor for several *NOVA* television programs about physics and the history of science, and was a guest on several public radio programs, including WBUR’s *Radio Boston*.



Professor Jennifer Light began service as STS program head on July 1, 2016. Over the past year, she has worked steadily to edit her draft manuscript, *Virtual Adults*, for submission to MIT Press. She also reviewed a book for *Nature*. Light gave talks at UC Berkeley, the Harvard Graduate School of Design (GSD), and the San Francisco Bay Area Planning and Urban Research Association, and delivered the keynote address at an STS conference jointly organized by the University of Toronto and York University (Canada). She participated as a panelist in events at the Urban History Association annual meeting as well as MIT campus events on cross-disciplinarity organized by HASTS graduate students and a Department of Urban Studies and Planning (DUSP) forum on preservation, and was a guest critic for thesis reviews at Harvard GSD.

Professor Light served on editorial boards for *IEEE Annals of the History of Computing*, *Historical Studies in the Natural Sciences*, *Information and Culture*, and *Journal of Urban History*. She refereed manuscripts for these journals and for *The Good Society* and *Projections*, as well as several university presses, and also reviewed multiple tenure and promotion cases for peer institutions. Professor Light made her undergraduate seminar on Youth Political Participation available on OpenCourseWare.

At MIT, Light served on doctoral dissertation committees for four students each in HASTS and DUSP, and for one in Architecture (Design and Computation), as well as on one master's thesis committee in Architecture. She also participated on dissertation committees for students at Northwestern University (Screen Cultures) and Harvard (Anthropology). In addition to her regular duties as program head, Light chaired an STS senior faculty search, served on a mentoring committee in DUSP, reviewed grant proposals for MIT International Science and Technology Initiatives (MISTI) and participated on the Institute-wide Martin Family Society of Fellows for Sustainability selection committee and the MITx Faculty Advisory Board. She also joined the Academic Advisory Board of the Junior States of America.

Professor David Mindell is on professional leave from MIT to pursue a startup opportunity. While on leave, he served as a member of the MIT Museum Advisory Board. He presented talks on his most recent book, *Our Robots, Ourselves*, at Yale, the Institute for Human and Machine Cognition, the JASON group at the Department of Defense, the New Jersey Industrial Council, and the Smart Manufacturing Summit in Seattle. He gave keynote addresses at the Robotic Science and Systems conference and the American Institute of Aeronautics and Astronautics Aviation Conference and numerous industrial and academic venues. He spoke at MIT events on the future of work with Secretary of State John Kerry and to MIT's Academic Council. He recently founded Humatics Corporation to develop ideas and technologies for safe, transparent, and trustworthy human/robotic collaborations. Humatics was named one of MIT's "STEX 25" featured startups by the MIT Industrial Liaison Program. Mindell and his wife Pamela continue as heads of house at MIT Edgerton House.

Assistant Professor Robin Wolfe Scheffler enjoyed a productive second year on the STS faculty. At the beginning of the year Scheffler was awarded the Leo Marx Career Development Assistant Professorship in the History and Culture of Science. The major focus of his research work was the successful completion of a draft manuscript of his first book, *A Contagious Cause: The Search for Cancer Viruses and the Growth of American*

*Biomedicine*, which is now under review by the University of Chicago Press. Scheffler gave invited presentations on this work at the Johns Hopkins University Department of the History of Medicine's long-running colloquia series as well as at the Boston University American Political History Institute's seminar series. He also presented on elements of this book at the Society for the Social Studies of Science, the History of Science Society, the American Association for the Advancement of Science, and the Science and Democracy Network. This last presentation will serve as the basis for an article on cancer virus research in collaboration with Colby College sociologist Natalie Aviles. In addition to work on his book, Scheffler completed work on a chapter on the x-ray crystallography of biomaterials for *Tools in Materials Research* and an article on the issues of entrepreneurship and intellectual property around the WI-38 cell line for *Studies in the History and Philosophy of the Biological and Biomedical Sciences*. He also published book reviews in venues such as the *British Journal of the History of Science*. On a less satisfactory note, a proposal that Scheffler submitted to the NSF's Science, Technology, and Society division for support of his second book project on the history of biotechnology in the Boston area was awarded the highest possible ranking during review but remains unfunded due to budgetary exigencies.

Scheffler served as the co-convener, with Professor Deborah Fitzgerald, of the STS Program's well-attended colloquia series, sharing responsibility for the selection of the speakers and one on-the-spot commentary. He took part in the HASTS Program admissions process, reading applications and interviewing applicants. He served on the qualifying exams committee of one graduate student, Jia-Hui Lee, who passed his exams this past June. He also served as a reader for graduate student Ellie Immerman's first-year paper. Outside the program, Scheffler serves as a faculty member on the steering committee for the Environmental Solutions Initiative's new minor, and is taking part in a multischool effort to develop one of the core courses for it. The course will be offered in spring 2018. This work furthers the course development efforts he continues to carry out with grant support from the Environmental Solutions Initiative.

Scheffler taught four courses this year. In the fall he co-taught undergraduate subject STS.009 Evolution and Society with John Durant and oversaw an independent study course on biotechnology and society with a graduate student in the Department of Architecture's Design Computation Group. In the spring he substantially revised and co-taught an undergraduate course on bioethics with Alexander Prescott-Couch of the Department of Linguistics and Philosophy and offered a new graduate seminar on the history of medicine and health in a global context.

Associate Professor Hanna Rose Shell saw substantial developments on the research, teaching, service, and public outreach fronts. She taught three subjects: STS.260 Introduction to Science, Technology, and Society, STS.008 Technology and Experience, and STS.056 Science on Screen. She continued publishing and editorial work for *Technology and Culture*, the premiere scholarly journal in the history of technology, and the organ of the Society for the History of Technology. Shell also continued her very active participation in the Society for the History of Technology; in addition to serving on the editorial board of its journal, she served as a member of the Ferguson Prize committee. She serves on HASTS doctoral committees, as a reader on second-year papers, and developed (with colleague Merritt Roe Smith) plans for the upcoming year's

STS colloquium series. Her book, *Shoddy: Technology, Waste, and Identity*, under contract with University of Chicago Press, is in progress with an expected completion date of September 2017. Her film *Shoddy Aliens*, part of the digital component of said book, was completed during the year.

Professor Merritt Roe Smith continues to work on a book about the American Civil War as a technological event. He also is working on a general survey of technology in antebellum America tentatively titled, *A Mechanical Age: Technology and Social Change in the Early American Industrial Revolution (c. 1789–1880)*. In September, he contributed a selection on the Transcontinental Railroad (c. 1862–1869) to the Massachusetts Historical Society's exhibit, "Turning Points in American History." He also did a PBS radio interview on "Eli Whitney and Interchangeable Parts" for the *Backstory* series in September and another piece on "Whitney and American Industry" for China Central Television's series *The Power of Quality* in October. He lectured on "The American System of Manufactures and its Long-Term Significance" at the National Endowment for the Humanities Landmarks of American History Workshop at the Tsongas Center/University of Massachusetts, Lowell in July, and commented on a paper about the construction of the transcontinental telegraph system by Boston University's Edmund Russell at the Boston Environmental History Seminar in October. He continues to edit the Johns Hopkins Studies in the History of Technology series (Johns Hopkins University Press) and serves on the editorial board of *Vulcan*, a new journal published by Brill devoted to the history of military technology. Other scholarly activities include service on the national advisory committees of the Thomas A. Edison Papers (Rutgers University), The American Precision Museum (Windsor, Vermont), The Sam and Elizabeth Colt Industrial and Frontier Heritage Center (Hartford, Connecticut), *American Experience* television series, and the Lincoln Prize in Civil War History (Gettysburg College). His committee service at MIT includes the Committee on Academic Performance, the N.G. Herreshoff exhibit at the MIT Museum, and the current search for a senior historian of technology in the STS Program.

Professor Sherry Turkle began 2016 with a book tour for the paperback release of her New York Times bestseller *Reclaiming Conversation*, during which she led workshops about conversations in a context of difference. This was the subject of her presentations at the American Academy of Arts and Sciences, at the Boston Book Festival, at the Providence Athenaeum, at the midyear meeting of the Conference of Chief Justices, and in the corporate world, at Microsoft and Apple. One of her particular interests is to bring a more conversation-based (rather than a blindly technology-based) approach to K-12 education, and this brought her to speak to the Association of Independent Schools Annual Conference and to the Council of Independent College Presidents.

Turkle enjoys speaking to local Boston/Cambridge associations. This year she spoke to the Chilton Club, gave the Altman Lecture in Newton, the Carey Lecture at the Lexington Public Library, and spoke to the annual Town Hall meeting of the Boston Red Sox. Turkle gave numerous invited academic lectures around the country, several associated with winning prizes: the Kohl Education Prize from the Dolores Kohl Education Foundation at the 2016 Chicago Humanities Festival and the Everett M. Rodger's Award from the University of Southern California Annenberg School of Communication and Journalism. She was also awarded an honorary doctor of laws from Concordia University.

For Professor Turkle, the highlight among these appearances was to give the Literary Oration at the 2017 Phi Beta Kappa Literary Exercises at Harvard Commencement on “how technology makes us forget what we know about life.”

Over the past year, Turkle continued her work on the advisory boards of Common Sense Media and the Boston Children’s Museum. She is on the Board of Directors of the Electronic Privacy Information Center and the Society of Responsible Robotics. She is also on the executive boards of *The Public Eye; Science, Technology, and Human Values*; and *Philosophy and Technology*. Turkle is a member of the American Academy of Arts and Sciences, serving on their Boston-Cambridge Events Planning Committee.

Professor Turkle’s publications this year focused on the new challenges for psychotherapists as they contend with technologies that have the potential to supplant them, from therapy by FaceTime and Skype to computer programs that are written to replace psychotherapists. She has published on this in an article, “Reclaiming Psychoanalysis,” in *Psychoanalytic Perspectives*, in “The Empathy Gap: Digital Culture Needs What Talk Therapy Offers,” in *Psychotherapy Networker*, and in a long review article on the body in virtual culture, “Empathy Machines: Forgetting the Body in Digital Culture,” in a collected volume with Columbia University Press (in press). Turkle is currently at work on two new books. The first, *The War on Empathy*, deals with the rise of digital culture and its attack, unnecessary to its purposes, on the culture of empathy. The second is an intellectual memoir, *The Memory Closet*. One element of that memoir was a piece of autobiographical writing she did when asked to eulogize MIT professor Seymour Papert for a memorial service at the Media Lab. The eulogy, about Papert’s relationship to objects was reprinted as a blog in the *London Review of Books*.

During the past academic year Professor Rosalind Williams participated in a National Academies workshop on the integration of arts and humanities with engineering and science education. She was also engaged with undergraduate education through classroom teaching, UROP supervision, and co-chairing (with Professor Deringer) a departmental committee tasked with reviewing the STS undergraduate program. Other STS departmental service included hosting visiting scholars and chairing a tenure committee. Her service to MIT included participation in the Center for Art, Science & Technology Selection Committee, the MIT Museum Collections Committee, and the Compton Prize Selection Committee. In the fall, she was invited to give the Sidney P. Stone Lecture at Boston University and in the spring to speak at a symposium in honor of Wiebe Bijker upon his retirement from Maastricht University. Her scholarly work took a turn towards geography and landscape architecture, as she published a series of short papers related to these topics: on “Redesigning Design” for *New Geographies 09*, a foreword to Pierre Bélanger’s new book *Landscape as Infrastructure*, and on “Exile in Place” for *Very Vary Veri*, a publication edited by students at the Harvard Graduate School of Design.

**Jennifer S. Light**

**Program Head, Science, Technology, and Society**

**Professor of Science, Technology, and Society**

**Professor of Urban Studies and Planning**