

Program in Science, Technology, and Society

This has been a year of significant turnover for the Program in Science, Technology, and Society (STS). On the faculty front, two professors are departing this summer (associate professor Joseph Dumit for the University of California at Davis and associate professor Hugh Gusterson for George Mason University), while two new ones joined us in the summer of 2005 (assistant professor David Jones and adjunct professor John Durant, who is also director of the MIT Museum). Leadership of the program is also turning over: David and Frances Dibner professor David Mindell will become director of STS on July 1, 2006.

During the academic year, we conducted a search for new faculty in the social studies of contemporary science and/or technology. This process led to the hiring of two assistant professors, Vincent Lépinay and Natasha Schull.

Lépinay, who earned a doctorate in the anthropology of science in 2003 at the École des Mines, followed by a master's degree in sociology at Columbia University, joined us in fall 2006. He specializes in the social study of finance; for his doctoral research, he became qualified as a trader in a major French bank that was developing a new line of business, the capital guarantee product.

Schull has three degrees in anthropology from the University of California at Berkeley (BA, MA, and PhD in 2003). She is currently a Robert Wood Johnson fellow at Columbia University and will assume another postdoctoral fellowship during the coming academic year at New York University before joining our faculty in fall 2007. She works on technologies of addiction; her doctoral research investigated the organization and machinery of gambling at Las Vegas casinos.

The turnovers in the STS Program this past year also involved physical space. The research group of Professor Ted Postol, long housed in another building, moved to the STS building (E-51) in the fall. This move caused significant reshuffling and renovations but has generally worked out well for the program. Less happy is the anticipated departure of the Dibner Institute from a neighboring building, E56. We regret that this year is the last one for an institution that has been an important source of practical and intellectual support for historians of science and technology. (The Burndy Library, also housed in E56, will move soon to the Huntington Library in Pasadena, CA.)

This year of turnover has also involved STS staff. Two staff members, Debbie Meinbresse and Kris Kipp, assumed new administrative staff positions (events and outreach coordinator and academic administrator, respectively). Kathaleen Brearley assumed a new role as assistant to the academic administrator, while Patrice Macaluso served as a temporary but long-term assistant to the director. Administrative officer Deborah Fairchild resigned in December 2005 after nearly four years of service; in March 2006 Paree Pinkney joined STS as the new administrative officer. Despite these comings and goings—and at times because of them—the STS staff worked together efficiently and effectively to support the many activities of the program.

Recent turnovers in MIT's administration also promise to be important for STS. During the past year, Professor L. Rafael Reif became the new provost and Daniel Hastings, former head of the Engineering Systems Division (ESD), was named the new dean for undergraduate education. At the end of the year Philip Khoury resigned as dean of the School of Humanities, Arts, and Social Sciences (SHASS) to assume a new position as associate provost. Professor Deborah Fitzgerald, associate dean of SHASS, will serve as acting dean of the school during the search for Khoury's successor. Professor Mindell served on the search committee for the new dean of undergraduate education and is currently serving on search committees for Hastings's replacement as head of ESD and for the new SHASS dean.

Professors Mindell and Fitzgerald are also centrally involved with the Task Force on the Undergraduate Educational Commons, which is proposing a new set of General Institute Requirements for MIT undergraduates. Professor Mindell is a member of the task force, while Professor Fitzgerald led the discussions in the school regarding a new HASS requirement that has been proposed. Professors Mindell, Jones, and Durant all submitted proposals for new STS classes that would support the proposed curricular changes.

All of this turnover beyond our departmental borders is relevant for STS because our mission of understanding the interrelationships of science, technology, and society necessarily involves collaborations across the Institute. The new MIT leadership has emphasized its commitment to this mission, and the leadership and the task force continue to stress the need for more interdisciplinary research and education at MIT. STS therefore looks forward to strengthening and extending its involvement with the larger institution.

Educational Activities

The STS Program offered 25 undergraduate subjects and 23 graduate subjects in AY2005–2006. Two of these were new graduate subjects; six were new undergraduate subjects. Undergraduate enrollment totaled 599. (At least two classes, new ones in the history of medicine and in bioethics, had to turn away some prospective students—a testimony to undergraduate interest in these areas.) Graduate enrollment totaled 262.

In our teaching program, we continue to emphasize collaborations with other parts of MIT. This year we offered 17 subjects jointly with other departments (Anthropology, History, Electrical Engineering and Computer Science, Health Sciences and Technology, Linguistics and Philosophy, Media Arts and Sciences, Political Science, Women's Studies, ESD, and Aeronautics and Astronautics). Some examples follow:

- Professor Jones's new class on bioethics (STS.006J), which explores ethical questions that have arisen from the growth of biomedical research and the health industry since World War II, was jointly listed with Linguistics and Philosophy.
- Cutten professor of the history of technology Merritt Roe Smith teaches a class designed for PoET, MIT's new Program on Emerging Technologies. The seminar, Social and Political Implications of Technology (STS.462), attracted MIT graduate

students from ESD, Architecture, Materials Science and Engineering, Political Science, and STS, as well as students from Harvard.

- Professor Michael Fischer teaches Ethics and Law on the Electronic Frontier with Professor Harold Abelson from Course 6; in this course, students meet and question technologists, activists, law enforcement agents, journalists, and legal experts. Also, along with Harvard Medical School professors Byron and Mary Jo Good, he teaches Social Studies of Bioscience and Biotechnology (HST.930J), offered jointly with Health Sciences and Technology.

This year, STS had two undergraduate majors, six minors, and 44 concentrators (30 of whom graduated in June 2006). We offered six undergraduate HASS Distribution (HASS-D) subjects and nine communication intensive (CI-H) subjects. Our new HASS-D, CI-H class, STS.006 Bioethics, drew the largest enrollment among STS subjects (98 students in spring 2006).

The STS program offered two Undergraduate Research Opportunity Program projects, supervised by Robert M. Metcalfe professor of writing Rosalind Williams. Jenna Karagianis (Course 7, '06) conducted her research at the NOVA/WGBH Science Unit Internship program, and Brian Keegan (Course 2 and STS, '06) completed a project titled "Oral Histories of the 'Founding Fathers' of the Program in Science, Technology, and Society." Keegan, one of our majors, completed a report on this project for his senior thesis. Our other major, Jina Kim, worked with Professor Durant on her thesis titled "STS.WEB: A Proposal for the First On-line Class at MIT."

Doctoral Program

The doctoral program in History, Anthropology, and Science, Technology, and Society (HASTS), approved by the MIT faculty in 1988, represents a collaboration of STS, the History faculty, and the Anthropology Program. During 2005–2006, there were 27 students in the program. We graduated one student this year: Wen-Hua Kuo. Following the completion of his appointment as a visiting scholar in STS, Dr. Kuo will be teaching at the National Yang-Ming University with a joint appointment in the Center for General Education and the Department of Social Medicine in Korea. We are planning to enroll five new students in the fall. Our students continue to be successful at winning competitive fellowships to support their graduate studies.

Projects, Grants, and Initiatives

Professor Fitzgerald received a grant from the National Science Foundation (NSF) to support her research project "A Matter of Convenience: The Food Industry in Postwar America." This project will look at the synergistic role of the federal government, food processors, and university departments of food science and technology in defining the postwar food industry.

Associate professor David Kaiser continued research on his project "Training Quantum Mechanics: Pedagogical Pressures and Curricular Reform in Modern Physics." The Spencer Foundation continues to support this work on the changing ways in which physicists made sense of quantum mechanics in postwar America, Europe, and Japan.

Professor Loren Graham continued his study, supported by the NSF, of changes in the organization of the scientific workforce and financing of the basic sciences in Russia since the collapse of the Soviet Union.

Professor Postol and the Science, Technology, and Global Security Working Group he leads continued research on their project “Preserving and Enhancing Technical Security,” with ongoing support from the John D. and Catherine T. MacArthur Foundation. Professor Postol and the working group were recently awarded a \$1.2 million grant by the MacArthur Foundation to help reduce the dangers posed by nuclear and biological weapons and materials. Grant funds will be used to nurture midcareer and aspiring science and security experts; to conduct technical studies on a range of security issues, including risk reduction in South Asia; and to support efforts to ensure that technical analyses are relayed to policymakers in a timely fashion.

Professor Postol received a grant from the Ploughshares Fund for a project called “Promoting Nuclear Stability in South Asia.”

Professor Turkle received a three-year research grant from the Intel Corporation to study “nurturant technologies.”

Ongoing Activities of the Program

Ongoing activities of the STS Program 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, which this year brought nine scholars to campus to meet informally with our faculty and HASTS graduate students. Scholars speak on the history or social study of science and on technology. This year’s topics included: “The Work of Economics: How a Discipline Makes Its World”; “Genealogical Branches, Genetic Roots, and the Pursuit of African Ancestry”; and “The Racial Achievement Gap and What to Do About It.” In addition, the program hosted eight informal brown bag lunch talks offered by STS faculty, visiting scholars, and invited speakers. These talks covered such diverse topics as “The Politics of Stem Cells in Sweden,” “History of Science and Its Peculiarities in Russia,” and “How Can Academics Respond to Katrina?”

Every year the STS Program also sponsors the Arthur Miller Lecture on Science and Ethics, which is advertised to the larger MIT and Boston area communities. This past fall, President Hockfield delivered the Miller lecture on the topic “The University and Its Responsibilities.”

Vinocur Coslovsky of the Department of Urban Studies and Planning (DUSP) has been named the winner of this year’s Benjamin Siegel Prize, an award of \$2,500 given annually for the best essay on issues relating to science, technology, and society written by an MIT student during the previous year. This year’s prize committee (visiting professor Marcia Bartusiak of Writing and Humanistic Studies, associate professor Christopher Capozzola of History and, serving as chair, Professor Gusterson of Anthropology and STS) reviewed the second highest number of submissions ever received for the Siegel Prize: 27 in all. Coslovsky’s winning paper is titled “The Rise and Decline of the Amazonian Rubber Shoe Industry: A Tale of Technology, International

Trade, and Industrialization in the Early Nineteenth Century.” An honorable mention went to Natasha Myers of the HASTS doctoral program for her paper “Animating Mechanisms, Enlivening Models: ‘Intra-Animacy’ in the Lively Arts of Protein Modeling.”

Discussions with the Siegel family this year led to the decision to begin a new Siegel prize next year, which will be awarded to outstanding teaching on the part of a HASTS graduate student in serving as a teaching assistant. Details of the selection criteria and process will be discussed further in expectation that the new Siegel Teaching Prize will first be awarded in spring 2007.

History faculty and STS cosponsored the Modern Times, Rural Places Seminar Series at MIT. This series, coorganized by associate dean Fitzgerald and Arthur J. Conner professor of history Harriet N. Ritvo, brought six speakers to campus to give talks on environmental history.

Manuel Castells, the Marvin C. and Joanne Grossman distinguished visiting professor of technology and society now based at the Open University of Catalonia, was brought to MIT for two weeks in April by STS, the Media Lab, and DUSP (STS served as his administrative home). Under this arrangement, Professor Castells will return annually for two-week visits through spring 2009 to teach a graduate seminar and develop research projects.

Special Events

In December, the STS Program brought together some of its founders for an afternoon of discussions about the history of the program. Professors emeriti Donald Blackmer, Loren Graham, Carl Kaysen, Kenneth Keniston, and Leo Marx joined Professors Smith and Williams for the discussion. Also, Thomas Rosko, head of Institute Archives and Special Collections, joined the group for a portion of the discussion. Other members of the program were invited to join the founders for a reception and dinner followed by a lively discussion of the program’s early days. As a follow-up to this event (see Educational Activities above), MIT undergraduate Brian Keegan interviewed the program’s founders during the spring term. The tapes he made of these conversations, as well as his thesis about the early days of the program, are being deposited in the MIT Archives.

With Gregory Dorr and Anne Pollock, Professor Jones organized Race, Pharmaceuticals, and Medical Technology, a two-day conference held April 7 and 8. The conference was sponsored by the Center for the Study of Diversity in Science, Technology, and Medicine and the STS Program, with generous support from the Andrew W. Mellon Foundation. The conference brought together scholars from many fields—medicine, history, anthropology, nursing, sociology, STS, genetics, public health, business, African American studies, ethics, and law—to discuss the promise and pitfalls of the new racial therapeutics in medicine.

Associate dean Deborah Fitzgerald organized a three-day conference on agrarian societies for the annual meeting of the Agricultural History Society, held at MIT June

15–17, 2006. Thirty-seven sessions were held over the three days on a wide range of topics, including: “Border Crossings: The Diffusion of Disease and Expertise,” “Cultural Landscapes of Industrial Production in Agriculture,” “Popular Representations of Rural People in Place,” and “Imposed Improvement: Contesting the Scientific Spirit.”

Knight Science Journalism Fellowship Program

Now entering its 24th year, the Knight Science Journalism Fellowship Program continues to attract science journalists from around the world to learn more about the science and technology they cover. During his eighth year as director of the program, Boyce Rensberger organized weeklong intensive seminars for this year’s fellows and additional science journalists in medical evidence and stem cell research. In January the Knight fellows traveled to Costa Rica to meet with scientists and journalists. The group spent several days at La Selva Biological Station, hiked around Arenal Volcano, and visited the National Aeronautics and Space Administration’s high-altitude research program based in San Jose.

The 23rd class of fellows includes Piotr Cieslinski, science editor for *Gazeta Wyborcza*, a newspaper in Poland; Mary Engel, an editorial writer for the *Los Angeles Times*; Joseph McMaster, a producer for “NOVA” at WGBH-TV in Boston; Natasha Mitchell, presenter and producer of *All in the Mind* for the Australian Broadcasting Corporation; Rachel Ross, technology reporter for Canada’s largest daily newspaper, the *Toronto Star*; Michael Stroh, a science writer from the *Sun* in Baltimore; Luke Timmerman, a biotechnology reporter for the *Seattle Times*; Corinna Wu, producer and writer for *Science Update*, the radio program of the American Association for the Advancement of Science; Rebecca Zacks, senior editor from *Technology Review*; and Yan Zhao, science editor of *Science Times*, a daily newspaper published by the Chinese Academy of Sciences in Beijing.

Fellows attend more than 60 seminars with faculty, which are specially organized for them, as well as other seminars and workshops devoted to science and technology and their wider impacts. The fellowships are supported by an endowment contributed by the John S. and James L. Knight Foundation of Miami and by alumni and foundation gifts. More information about the Knight Science Journalism Fellowship Program can be found at <http://web.mit.edu/knight-science/>.

Faculty Activities

Professor Fischer’s book *Emergent Forms of Life and the Anthropological Voice* won this year’s Senior Book Prize from the American Ethnological Society. He was also selected as one of 16 Carnegie Scholars for 2005 by the Carnegie Corporation. This year, Professor Fischer published four articles and three reviews, and he currently has three chapters in press: “The Geoid as Transitional Object” (in S. Turkle, ed., *Evocative Objects: Things We Think With*), “To Live With What Would Otherwise Be Unendurable: Return(s) to Subjectivities” (in J. Biehl, B. Good, and A. Kleinman, eds., *The Anthropology of Subjectivity*), and “To Live With What Would Otherwise Be Unendurable: Caught in the Borderlands of Palestine-Israel” (in M. J. Good and S. Hyde, eds., *Postcolonial Disorders*). In addition, Professor Fischer published *Geodesy: What’s That?*, the scientific memoirs of his mother, an internationally recognized mathematician who was a member of the

National Academy of Engineering as well as one of the first inductees of the National Imaging and Mapping Agency Hall of Fame.

Associate dean Fitzgerald continued working on her NSF grant “Convenience and Necessity in the American Food Industry” and presented research from this ongoing work at workshops in Bielefeld, Germany, and Lisbon. She continued to sponsor (with Professor Ritvo) the Modern Times, Rural Places Seminar Series at MIT. At the behest of the Task Force on the Undergraduate Commons, she organized and headed the HASS Overview Committee Plus (HOC+), which issued a report on proposed changes to the HASS requirement. She was local arrangements chair for the first annual meeting of the Agricultural History Society, held at MIT in June 2006. She served on the Committee on Student Life, the MIT Museum Collections Committee, and the Commencement Committee (she was a student marshal). As noted above, she is now serving as acting dean for the SHASS.

Professor Graham’s publications this year included *Moscow Stories* (Indiana University Press); “A Comparison of Two Cultural Approaches to Mathematics: France and Russia, 1890–1930,” with Jean-Michel Kantor (*Isis*, March 2006); and “Foundations: A Novelty in Russian Science,” with Irina Dezhina (*Science*, December 16, 2005). In addition, Graham’s 1998 historical novel *A Face in the Rock: The Tale of a Grand Island Chippewa* (University of California Press) is currently being made into a movie (<http://www.afaceintherock.com/>).

Professor Jones joined the MIT faculty in July as the Leo Marx career development assistant professor of the history and culture of science and technology. He continued to direct the Center for the Study of Diversity in Science, Medicine, and Technology, funded by the Andrew W. Mellon Foundation, and organized a conference hosted by the center (see Special Events above). He is now publishing a collection of papers from the conference, planning a follow-up conference for April 2007, and expanding the presence of the center at MIT. He has also continued his research on the history of race, genetics, and pharmacology and given invited lectures based on this research at Johns Hopkins University, Harvard University, Dartmouth Medical School, and the University of Southern California. His teaching included a graduate seminar on the history of science (STS.310), a HASS-D course on the history of science (STS.003), and two new HASS-D/CI courses, one on the history of medicine (STS.005) and one on dilemmas in bioethics, cotaught with Caspar Hare from the Department of Linguistics and Philosophy (STS.006/24.06). He is now in the early stages of developing a new course, on genetics and society, with faculty from the Department of Biology. In addition to this work at MIT, he works as a staff psychiatrist at Cambridge Hospital’s Psychiatric Emergency Service, as a lecturer in the Department of Social Medicine at Harvard Medical School, and as an associate editor of the *Harvard Review of Psychiatry*.

Professor Kaiser has been working steadily this year on his new book project, *American Physics and the Cold War Bubble*, under contract with the University of Chicago Press. Some material from this new book has been accepted as a feature article in *Scientific American*. He also published a lengthy physics article with three colleagues in the journal *Physica A* (on statistical mechanics) and has made progress on a different physics project regarding extraspatial dimensions and our observable universe. He had one

of his recent historical articles reprinted in an edited volume marking the centennial of J. Robert Oppenheimer's birth. Another historical article is currently in press at the journal *Social Studies of Science*, and he has completed two long entries for the *New Dictionary of Scientific Biography*. A two-hour documentary film about Einstein and $E = mc^2$ on which Professor Kaiser served as a consultant and on-screen contributor debuted during October 2005. Kaiser also completed three radio interviews about Einstein and relativity in conjunction with the World Year of Physics (2005) and has finished filming for a separate "NOVA" television segment about contemporary nuclear physics. He currently serves on the advisory board for a new four-hour "NOVA" documentary about cosmology. He delivered nine invited seminars and colloquia across the country during the year. Recent honors include the Forum for History of Science in America Article Prize (awarded for the best article on the topic during a three-year period) and the Harold Edgerton Faculty Achievement Award at MIT.

Professor Evelyn Fox Keller was awarded a Blaise Pascal research chair by the Préfecture de la Région D'Ile-de-France for 2005–2007 and is currently in Paris. She was recently elected to membership in the American Philosophical Society.

Professor Mindell completed his book *Digital Apollo: Human and Machine in the Six Lunar Landings* (MIT Press, 2007). He has continued to serve as a member of the Task Force on the Undergraduate Educational Commons, and he also served on the search committee for the dean of undergraduate education. He currently serves on search committees for the director of ESD and for the dean of SHASS. The DeepArch Research Group organized by Professor Mindell is conducting an underwater robotic survey of a fourth-century BC classical shipwreck in collaboration with the Woods Hole Oceanographic Institution and the Greek Ministry of Culture in Chios, Greece. He developed a television documentary with the BBC based on his book on the Civil War ironclad warship *Monitor*, which will be aired on the Discovery Channel this spring.

Professor Postol continues his work on policy issues connected with missile defense systems in collaboration with the Science, Technology and Global Security Working Group, supported by the MacArthur Foundation.

Professor Smith received MIT's Arthur C. Smith Award this spring for his contributions to undergraduate life and learning. He and his coauthors published the second edition of *Inventing America: A History of the United States* in January. Smith also wrote "Taking Stock of the Industrial Revolution in America," an essay that will appear in a book tentatively titled "Comparative Perspectives on the Industrial Revolution," part of the Dibner Institute series on the history of science and technology published by MIT Press. He continues as coprincipal investigator for the PoET program Integrative Graduate Education and Research Traineeship/NSF grant. He also continues to edit the Johns Hopkins Studies in the History of Technology at Johns Hopkins University Press as well as to serve on the advisory boards of the MIT Museum, the American Precision Museum, the Museum of American Textile History, and the acclaimed television series "The American Experience." He recently began a book on technology and modernization during the Civil War period and is serving as housemaster of the Burton-Conner undergraduate residence at MIT.

Professor Turkle continues her work as the director of the MIT Initiative on Technology and Self. This year she taught two new courses associated with the initiative, one on science, technology, and memoir and a second on the role of objects in science studies. She has edited and written introductions for three essay collections that will be published by MIT Press: *Evocative Objects: Things We Think With*; *Objects in Mind: Falling for Science, Technology, and Design*; and *The Inner History of Devices: New Mediations on Minds, Bodies, and Machines*. Among her publications this year were “Tamagotchi Diary” in the April 20 issue of the *London Review of Books*, a foreshadowing of her upcoming book on robots and American culture, and a keynote address at the Dartmouth Artificial Intelligence Conference celebration AI@50, to be published in that conference volume. In addition, her personal research involves her concept of “tethering,” a new form of social/psychological encounter facilitated by digital technology and the new kind of self it generates, as well as “relational artifacts.” She is writing a book on these topics with the working title “Intimate Machines.” Professor Turkle is engaged in active study of robots, digital pets, and simulated creatures, particularly those designed for children and the elderly. She coteaches a course, *Relational Machines*, that deals with the social psychology of these objects.

Professor Williams has been named the next Dibner professor of the history of science and technology. In the fall she was the O’Donovan distinguished visitor at the University of Waterloo (Waterloo, Ontario), where she gave two public lectures and participated in a series of informal meetings on research and educational issues. In early December, she served on the International Evaluation Committee for the Research Institute of the Faculty of Arts and Culture, Maastricht University (Maastricht, the Netherlands). She was invited to lecture at the Colby College STS speakers’ series in March. Her chapter “The Unintended Consequences of Innovation: Change and Community at MIT” appeared in *Cultures of Technology and the Quest for Innovation* (Helga Nowotny, ed., Berghahn Books). Her term as president of the Society for the History of Technology continues until the end of calendar year 2006.

Rosalind H. Williams

Director

Robert M. Metcalfe Professor of Writing

More information about the Program in Science, Technology, and Society can be found at <http://mit.edu/sts/>.