

Program in Science, Technology, and Society

This year the Program in Science, Technology, and Society (STS) welcomed a new director, David Mindell, the Frances and David Dibner professor of the history of engineering and manufacturing and professor of engineering systems, and saw new possibilities for the future. On the faculty front, we had two significant promotions: associate professor David Kaiser to associate professor with tenure and David Jones, Leo Marx career development assistant professor of the history and culture of science and technology, to associate professor without tenure. One new faculty member, assistant professor Vincent Lépinay, began in his post and another, assistant professor Natasha Schull, is set to begin on July 1, 2007. These new and newly promoted faculty, combined with a new headquarters staff and one additional faculty hire, set a wonderful foundation of growth for the program.

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. Lépinay is developing exciting new courses on scientific controversies and on the social aspects of economics and finance. Schull is publishing an anthropological study of the phenomenon of machine addiction in Las Vegas casinos and will teach courses on neuroscience and society.

In AY2007–2008, the program will conduct a faculty search for a junior appointment in the history of science and technology, broadly conceived, to help rebuild numerical strength in this area. Increasing the presence of minority representatives and women in the department will be a major focus. The committee formed for the coming year's search will make special efforts to identify outstanding women and minority candidates.

Not least among the faculty changes in STS was Professor Deborah Fitzgerald's appointment as dean of the School of Humanities, Arts, and Social Sciences. We were enormously gratified to see her elevated to this important position and enjoy working with her in that regard. Yet Professor Fitzgerald's many contributions to the program will be missed during her tenure as dean, and we are working to hire lecturers to maintain her course teaching in her absence.

STS is proud to list as distinguished visiting professors a number of the highest-regarded faculty in our field. Professor emeritus Thomas P. Hughes (University of Pennsylvania) has long been associated with the program; Manuel Castells, Marvin C. (1951) and Joanne Grossman distinguished visiting professor of technology and society (University of Southern California, Open University of Catalonia in Barcelona), has been visiting for several years; and we are pleased to add Professor John Logsdon (George Washington University), a national leader in the field of space policy. These visiting professors visit campus regularly to collaborate with faculty and advise students.

In March 2006 Patee Pinkney joined STS as the new administrative officer, and the headquarters staff began to shift under her direction. Sarah Fowler was hired as assistant to the director, and Rose Rizzo was hired as a part-time financial assistant. We are particularly gratified to welcome Karen Gardner as the new academic administrator for STS. Patee Pinkney now oversees a revamped staff that includes both energetic new faces and respected professionals with long service to the program. The new administrative officer and her staff represent perhaps the single greatest change to the department this year, and they are already having a significant impact on the program.

Professor Mindell was centrally involved with the Task Force on the Undergraduate Educational Commons, which proposed a new set of General Institute Requirements for MIT undergraduates. While the ultimate disposition of the recommendations remains unclear, STS continues to be deeply interested in the outcome and has offered to prepare a Science, Technology, and Society pilot course for the proposed First-year Experience Program.

The major challenge the program faces is a general shortage of faculty, as many faculty are on leave and we are forced to hire increasing numbers of lecturers to fulfill our teaching obligations. We are fortunate to be flush with requests to collaborate in teaching and research from colleagues around the Institute, but we can only respond to some of those requests because of faculty time limitations.

Educational Activities

STS offered 19 undergraduate subjects and 22 graduate subjects in AY2006–2007. Three of these were new graduate subjects; two were new undergraduate subjects. Undergraduate enrollment totaled 302, and graduate enrollment totaled 162.

In our teaching program, we continue to emphasize collaborations with other parts of MIT. We offered 17 subjects jointly with other departments (Aeronautics and Astronautics, Anthropology, Engineering Systems Division [ESD], History, Linguistics and Philosophy, Management, Physics, Political Science, Women's and Gender Studies, and Writing and Humanistic Studies).

This year, STS had seven undergraduate minors and 64 concentrators (34 of whom graduated in June 2007). We offered four undergraduate HASS Distribution (HASS-D) subjects and five Communication Intensive (CI-H) subjects. In its second year, STS.006J Bioethics (a HASS-D, CI-H class) drew the largest total enrollment among STS subjects, with 166 students in spring 2007.

STS offered two Undergraduate Research Opportunity Program projects, supervised by Boyce Rensberger, director of the Knight Science Journalism Fellowship Program. One focused on the "Societal Impacts of Science Journalism" and the other on the "Effects of Journalism on Public Disclosure."

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 Section, and the Anthropology Program. The program is administered by STS, which awards the degrees. Professor Mindell served as acting director of graduate studies before the appointment of associate professor Stefan Helmreich (Anthropology) for 2007–2008. As acting director Mindell led a process with the HASTS steering committee that has clarified and resolved issues surrounding the governance and finance of this joint program, and also led a revamping of the admissions process (bringing finalist candidates to campus for interviews) that significantly increased the quality and yield of students (83 percent of our first-choice students accepted our offer of admission). From an admissions pool of close to 100 applicants, HASTS will enroll six new students in the fall (one minority student and three women), including a Harvard Law School graduate and a Pulitzer Prize winner and former Knight fellow.

During 2006–2007, there were 27 students in the program. Seven HASTS students received their doctoral degrees this year: Nathan Greenslit, Margaret Hiesinger, Hyun Gyung Im, Anne Pollock, Peter Shulman, Jenny Leigh Smith, and Livia Wick. Three of these graduates have secured faculty positions (at the American University of Beirut, Case Western Reserve University, and the Georgia Institute of Technology). Our students continue to be successful at winning competitive fellowships to support their graduate studies.

Projects, Grants, and Initiatives

In 2006, STS received a significant gift from an MIT alumnus to be spent on faculty salaries and graduate fellowships. For 2007–2008, this gift will help the program support individual faculty and student research projects.

Professor Mindell's new collaborative project on space, policy, and society received a significant gift from an MIT alumnus that will support research, teaching, and a professional conference.

The MIT-Portugal Program gave STS a grant to develop an STS and social science research methods course for students of engineering systems. The course will be taught to engineering students in Portugal and will be the basis in future years for a joint course between ESD and STS.

Professor Jones received a grant from the Foundation for Informed Medical Decision Making to produce a comprehensive study of decision making for cardiac revascularization. One goal of the study is a decision-making aid that will allow patients and clinicians to integrate all relevant clinical information and make the best decisions about cardiac interventions.

Theodore Postol, professor of science, technology, and international security, and the Science, Technology, and Global Security Working Group continued in their second year of the research project "Preserving and Enhancing Technical Security in Research and Education" with support from the John D. and Catherine T. MacArthur Foundation.

In addition, Professor Postol, with support from the Ploughshares Fund (under the project title “Promoting Nuclear Stability in South Asia),” took a delegation of technical experts from the United States to South Asia to meet with high-level policymakers and policy influencers to educate them about the pitfalls of weapons systems that India and Pakistan are considering and to suggest better alternatives.

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. We had a total of 13 speakers participate in our series this year under the general theme of “Science, Technology, and Society: The Big Questions.” The talks were well covered in *Tech Talk*. During the fall term, STS faculty members presented their latest research and its implications. Topics included “Public Engagement with Science and Technology: What Role for STS?” (adjunct professor John Durant), “Can STS Be Good Medicine for Medicine?” (Professor Jones), “What Is the Role of STS in Public Policy?” (Professor Postol), “What Questions Do ‘Sociable Robots’ Pose for STS?” (Sherry Turkle, Abby Rockefeller Mauzé professor of the social studies of science and technology), and “What Is It Like to Live in a Human-built World?” (Rosalind Williams, Bern Dibner professor of the history of science and technology).

During the spring term, faculty members from other departments at MIT (Media Lab, AgeLab, Urban Studies and Planning, History, Architecture, and Mechanical Engineering) gave their views on “Big Questions” covering such diverse topics as “Explorations in Socially Intelligent Robots”; “A New Look at Old Age: Science, Technology and Choosing How We Will Live Tomorrow”; “Communication Technology, Media, and Power”; “Medieval Architectural Technology: New Lessons from Master Builders”; and “Design for Development.” In addition, the program hosted five informal brown bag lunch talks offered by invited speakers on a wide range of topics, including “‘Ethics and Extremism’: The Use of Animals in Scientific Research”; “Mapping the Field of Vision: On Media, Vision and Frogs”; “Body Hunters: How the Drug Industry Tests Its Products on the World’s Poorest Patients”; and “FAUX REAL: Leather, Its Imitators, and the Making of a Book.”

Every year STS also sponsors the Arthur Miller Lecture on Science and Ethics, which is advertised to the larger MIT and Boston area communities. This past fall, Jim Yong Kim, MD, PhD (François Xavier Bagnoud professor of health and human rights, Harvard School of Public Health; professor of medicine and social medicine, Harvard Medical School; and chief, Division of Social Medicine and Health Inequalities, Brigham and Women’s Hospital), delivered the Miller lecture on the topic “Human Rights, Ethics and the Global Response to the AIDS Pandemic: Why We Can’t Wait,” addressing the urgent need for innovative and ethical responses to one of the deadliest pandemics in human history.

The Benjamin Siegel Prize of \$2,500 is awarded 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 of the Institute.

This year's prize committee awarded the 2006–2007 Benjamin Siegel Prize to HASTS graduate student Sophia Roosth for her paper "Sonic Eukaryotes: Sonocytology, Cytoplasmic Milieu, and the *Temps Interieur*."

Discussions with the Siegel family last year led to the decision to begin a new Siegel prize awarded for outstanding teaching on the part of a graduate student serving as a teaching assistant in STS. The first recipient of the Siegel Teaching Prize, awarded in spring 2007, was Peter Shulman.

Professors Fitzgerald (STS) and Harriet Ritvo (History) continued to cosponsor the MIT Seminar on Environmental and Agricultural History (formerly called the Modern Times, Rural Places Seminar Series), which brought seven speakers to campus to give talks on environmental and agricultural history.

Eminent sociologist Manuel Castells was brought to MIT for two weeks in March by STS, the Program in Media Arts and Sciences, and the Department of Urban Studies and Planning; STS serves as his administrative home. Under this arrangement, Professor Castells will continue to return annually for two-week visits through spring 2009 to teach a graduate seminar and develop research projects. The topic of this year's seminar was "Communication Technology, Media, and Power: Local and Global."

Knight Science Journalism Fellowship Program

Now entering its 25th 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.

The 24th class of fellows included Clark Boyd, technology correspondent for *The World*, an international news program coproduced by the BBC World Service in London and WGBH in Boston; Herton Escobar, a science and environment reporter for *O Estado de S. Paulo* newspaper in Brazil; Richard Friebe, a writer and editor at the science desk of the *Frankfurter Allgemeine Sonntagszeitung* in Germany; Lila Guterman, a senior reporter who covers research in science and medicine for the *Chronicle of Higher Education*; Elizabeth Howton, the science and health editor of the *San Jose Mercury News*; Jeanne Lenzer, a freelance medical writer who works primarily for the *British Medical Journal*; Wycliffe Muga, a writer for the *Daily Nation* newspaper in Kenya who also contributes a weekly "Letter from Africa" to the BBC World Service; Stephanie Nano, a supervising editor for the Associated Press; Sora Song, a science reporter for *Time* magazine; Tetsuro Yamada, a science writer for the *Yomiuri Shimbun* in Japan, the world's largest newspaper; Lu Yi, a senior editor and reporter for *Sanlian Life Weekly*, the largest newsweekly in China; and Zheng Yu, the desk editor for science and technology at the Xinhua News Agency, China's most influential news organization.

Fellows spent most of their time attending classes at MIT and Harvard, but also attended more than 60 seminars with faculty that were specially organized for them, as well as other seminars and workshops devoted to science and technology and their wider impacts.

During his ninth year as director of the program, Boyce Rensberger organized three weeklong intensive seminars, referred to as boot camps or workshops, for current Knight fellows and other science journalists. The topics this past year were medical evidence, global crises, and the universe. The medical evidence boot camp is in its fifth year, while this was the first year for the global crises boot camp. The universe workshop was a new addition to the Knight program after a generous grant from the Kavli Foundation and Fred Kavli established an endowment fund to cover expenses for an annual weeklong workshop. The subjects of each workshop will rotate among the universe, neuroscience, and nanotechnology.

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 interacting with scientists and researchers, hiked around Arenal Volcano with Costa Rica's leading vulcanologist, and met with Dr. Eduardo Doryan Garrón, executive president of the Costa Rican national health care system. In addition, the fellows visited health clinics and hospitals in San Jose and met with reporters and the editor of the country's largest newspaper, *La Nacion*.

The fellowships are supported by an endowment contributed by the John S. and James L. Knight Foundation of Miami, by MIT, 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 Michael Fischer was awarded the Andrew W. Mellon Professorship in the Humanities. In addition, he published two major articles; two book chapters; six short articles, commentaries, or introductions; and two reviews. He also has a new book under review and a third major article in press. He gave keynote lectures at the University of Chicago Theology without Nature conference, the Institute for Philosophy in Tehran (on science and ethics and on Iranian film), and the annual Mehregan Conference in San Diego. Also, he lectured at Harvard on Iranian diasporic art and politics ("Lords of Illusion") and on filmmaker Majid Majidi. He spoke on science, technology, and society and served as an honorary respondent for computer science projects at the Institute of Technology in Bandung, Indonesia, and lectured on science, technology, and society at the Academia Sinica, Yang Ming University, and Xingua University in Taiwan. He was a commentator on panels at three US national professional meetings and arranged a visit to the MIT Media Lab for former Iranian president Muhammad Khatami in conjunction with Khatami's official visit to Harvard and MIT. Professor Fischer has been on sabbatical this year working on the Carnegie Fellowship he was awarded in 2005–2006 on science and technology in the Muslim world.

Professor Jones continued his work as the Leo Marx career development assistant professor of the history and culture of science and technology and as director of the Center for the Study of Diversity in Science, Medicine, and Technology, funded by the Andrew W. Mellon Foundation. His research explores the history of cardiology and cardiac surgery in an effort to understand the history of decision making about cardiac revascularization, especially bypass surgery and angioplasty. He gave lectures about

current and past research at the University of Minnesota, Harvard University, and the headquarters of the Indian Health Service. His undergraduate teaching has included two HASS-D/CI courses, one on the history of disease (STS.005) and one on dilemmas in bioethics, cotaught with Professor Caspar Hare (Linguistics and Philosophy) (STS.006/24.06). In addition, he taught two graduate seminars, one on historical and anthropological studies of biology, cotaught with Professor Helmreich (Anthropology), and one on writing in STS, cotaught with Professor Lépinay (STS). At the Center for the Study of Diversity, he organized an April 2007 conference about the business of race and science, in particular the commercialization of new technologies of race and genetics. This conference attracted a range of scholars from law, history, epidemiology, medicine, sociology, and anthropology. In addition to his work at MIT, he works as a staff psychiatrist at the Psychiatric Emergency Service at Cambridge Hospital and as a lecturer in the Department of Social Medicine at Harvard Medical School, where he codirected a new course required of all first-year medical students on social medicine and global health.

Professor Kaiser has continued working on his book project, *American Physics and the Cold War Bubble* (University of Chicago Press, forthcoming). Material related to the project has recently been published in *Scientific American*, *Physics World*, *Social Research*, and *Social Studies of Science*. Separate articles and chapters are currently in press in *Scientometrics*, *American Scientist*, and the updated edition of the *Handbook of Science and Technology Studies* (MIT Press, in press). He has recently begun a new project, "MIT at 150: Moments of Decision," which will be an edited volume charting the history of MIT's first 150 years. Kaiser serves on the Executive Council of the History of Science Society and on the advisory board for a new NOVA-WGBH documentary titled *Fabric of the Cosmos* (on modern physics and cosmology), and he is an associate/advisory editor for both *Isis* and *Historical Studies in the Natural Sciences*. He is also beginning his second year as a consultant to the Office of Scientific and Technical Information, a branch within the US Department of Energy. During the 2006–2007 academic year, Kaiser addressed seven invited colloquia, including delivering the plenary lecture at the meeting of the Canadian Society for the History and Philosophy of Science. His earlier book *Drawing Theories Apart: The Dispersion of Feynman Diagrams in Postwar Physics* (University of Chicago Press, 2005) was honored with the 2006 Forum for History of Science in America Book Prize.

During his first year in the program, Professor Lépinay started rewriting his dissertation manuscript into a book, offered two new courses, and applied to the d'Arbeloff Fund with a view to developing two First-Year Experience courses (the Alumni Fund eventually supported one of them). Two of his articles were published in peer-reviewed journals or books, one in French (*Sociologie du Travail*, November 2006, on the stem cell controversy in the United States) and the other in an edited volume by Donald MacKenzie (Princeton University Press, April 2006, on the performativity of economics).

Professor Mindell completed his book *Digital Apollo: Human and Machine in Six Lunar Landings*, which will be published by MIT Press in the spring of 2008. Along with members of STS, ESD, and Aeronautics and Astronautics, he organized a new Space, Policy, and Society research group funded by an MIT alumnus. The group began the

Space Policy Forum, which brought policy scholars to campus for public talks, and it will organize an international conference on space, policy, and society next year. Mindell served on the search committee for the dean of the School of Humanities, Arts, and Social Sciences. He continued to develop the noncredit course *Living an Extraordinary Life*, which helps MIT students develop life skills as a complement to their classroom education. Mindell and his wife were named the first housemasters of MIT's Edgerton House (they will take residence in August 2007) and worked with Housing and Facilities to design the new housemaster facility. Mindell and STS were awarded a grant from the MIT-Portugal Program to develop a course in social science research methods for engineering systems students. Mindell serves as a member of the NASA historical advisory committee and the *IEEE Spectrum* editorial board. In addition, he served as acting director of graduate studies for the HASTS graduate program. He is working with the MIT alumni travel programs to organize tours of significant science and technology sites around the world, beginning with an industrial revolution tour of the UK in 2008.

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.

Merritt Roe Smith, Leverett Howell and William King Cutten professor of the history of technology, was named distinguished lecturer by the Organization of American Historians (by presidential appointment) for the period 2007–2010 and honorary guest professor at the Kanazawa Institute of Technology (Japan) beginning in 2006. He continues as coprincipal investigator for the Program on Emerging Technologies (PoET), which was recently awarded a five-year grant by the [National Science Foundation's Integrative Graduate Education and Research Traineeship Program](#). He wrote (with HASTS graduate student Kieran Downes and Dr. Christine Ng) "The Automobile in America: A Retrospective Technology Assessment" (to be published in 2007 as a PoET working paper). He serves on several MIT committees (Dean of Undergraduate Education Faculty Advisory Committee, 2006–2007; Committee on the Retention of Minority Faculty; Karl Taylor Compton Award Selection Committee; William L. Stewart Award Selection Committee; MIT Museum Board of Advisors, 2006–2007 [final term]; and MIT Chaplain Installation Planning Committee, spring 2007). He also continues to edit the Johns Hopkins Studies in the History of Technology series at Johns Hopkins University Press as well as to serve on several outside advisory boards and committees for the American Precision Museum, the American Museum of Textile History, WGBH's *American Experience*, and the Society for the History of Technology (SHOT). In addition to two invited lectures at the American Precision Museum, he chaired a panel at the SHOT annual meeting, was the keynote speaker at the National Endowment for the Humanities Landmarks of American History Teacher Workshops (Tsongas Industrial History Center/Lowell National Park, July 2006), and delivered the keynote address, "Steamboats, Steam Engines, and the Origins of Heavy Industry in the United States," at the Robert Fulton Steamboat Bicentennial Symposium at Bard College in June 2007. Smith continues to serve 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 courses associated with the initiative, one on science, technology, and memoir and a second on the role of objects in science studies. She cotaught a new Media Lab course with Professors Rosalind Picard and Cynthia Breazeal called Autism and Technology. The first of her three edited collections on things and thinking, *Evocative Objects: Things We Think With*, was published by MIT Press in June 2007. The other two volumes, *Falling for Science: Objects in Mind* and *The Inner History of Devices*, will follow in 2008. Among Professor Turkle's published writings this year were "Tethering," in *Sensorium* (Carolyn Jones, ed.); "Relational Artifacts with Children and Elders: The Complexities of Cybercompanionship," in *Connection Science*; and "Can You Hear Me Now," in the 90th anniversary issue of *Forbes* (May 2007). Accepted and forthcoming are "Authenticity in the Age of Digital Companions," in *Interaction Studies*; "The Immeasurables," in *What Inspires?* (John Brockman, ed.); and "Always-on/Always-on-you: A Tethered Self for Cyborg Sociabilities," in *Mainstreaming Mobiles: Mobile Communication and Social Change* (James Katz, ed.). Her presentations included the Marshall McLuhan lectures at New York University, lectures at Stanford University (Program in Science, Technology, and Society and Institute for the Humanities), and the keynote address at the 50th anniversary celebration of the *New Scientist* magazine. Professor Turkle is engaged in active study of robots, digital pets, and simulated creatures, particularly those designed for children and the elderly, as well as in a study, funded by the Intel Corporation, of mobile cellular technologies.

Professor Williams completed her term as president of SHOT at the end of calendar year 2006. Her presidential address, at the annual meeting of the society, was published in *Technology and Culture* under the title "Opening the Black Box." Earlier in the year the same journal published her essay "The Big Dig." Professor Williams was on leave in the spring term. Along with professor emeritus and senior lecturer Leo Marx, she participated in an ongoing series of seminars on literature and technology organized by a group of HASTS and Harvard graduate students. Most of her time, however, was devoted to research and writing for her next book, including a month at Balliol College, Oxford University, on the MIT-Oxford exchange program. She is also working with MIT Press on a second edition of her book *Notes on the Underground*, which will be published in spring 2008.

David A. Mindell

Director

**Frances and David Dibner Professor of the History of Engineering and Manufacturing
Professor of Engineering Systems**

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