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TechTalk
SERVING THE MIT COMMUNITY

Stem cell research guidelines announced

Elizabeth Thomson
News Office

In a report released today through the National Academies, 10 scientists, including two from MIT, offer guidelines for research involving human embryonic stem cells, the cells taken from a five-day-old fertilized egg that may be tweaked to become any organ within the body.

The report comes at an opportune time for Massachusetts as House and Senate leaders come closer to passing a bill that will promote human embryonic stem cell research in this state.

Although compliance is voluntary, some institutions have already agreed to abide by the guidelines, according to Richard O. Hynes, co-chair of the committee. Hynes is the Daniel K Ludwig Professor of Cancer Research at MIT. The Academies are urging all institutions conducting human embryonic stem cell research to establish oversight committees to ensure that the new guidelines are followed.

"These guidelines are important because stem cell research is potentially a very valuable way of treating people for a variety of diseases, but the whole field of stem cell research is surrounded by disparate ethical viewpoints," said Hynes, who is also a Howard Hughes Medical Institute Investigator.

"The aim here is to try to get everybody on the same page to do things properly," he said. "For example, if stem cell research is to be allowed, then there has to be a very careful, informed consent process. A standard set of requirements for deriving, storing, distributing and using embryonic stem cell lines—one to which the entire U.S. scientific community adheres—is the best way for this research to move forward."

Hynes' co-chair on the committee is Jonathan D. Moreno, a professor of biomedical ethics and director of the Center for Biomedical Ethics at the University of Virginia, Charlottesville. Nobel laureate Robert H. Horvitz, an MIT professor of biology, is also on the committee.

Guidelines from the report include:

• Embryonic stem cell research oversight (ESCRO) committees should be established. These committees should include legal and ethical experts, as well as representatives of the public, and experts in biology and stem cell research.

• Stem cells usually are harvested after three to five days from a blastocyst—an early stage of development before implantation in the uterus. The ESCRO committees should review proposals for research that takes stem cells from excess blastocysts at in vitro fertilization clinics or from blastocysts created expressly for stem cell research.

• Nuclear transfer must not be used for reproductive cloning.

• Human embryos used for research should not be grown in culture for longer than 14 days, or until the point when the body axis and central nervous system begin to form.

• Donor consent must be obtained before a blastocyst is used to generate

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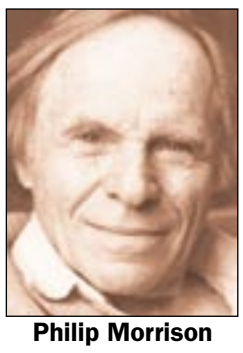
Institute Prof. Philip Morrison dies; he was 89

Elizabeth Thomson
News Office

MIT Institute Professor Emeritus Philip Morrison, a distinguished theoretical astrophysicist and interpreter of science and technology for the general public, died Friday, April 22, at his home in Cambridge. He was 89.

A member of the Manhattan Project who went on to become a vocal critic of the nuclear arms race, Morrison was widely known for his research and professional contributions in quantum electrodynamics, nuclear theory, radiology, isotope geology and, since the 1950s, in cosmic-ray origins and propagation, gamma-ray astronomy and other topics in high-energy astrophysics and in cosmology.


Philip Morrison

"The world has lost one of the major voices of social conscience in science. For more than 50 years, since his involvement in the development of the first atomic bomb, Philip Morrison has been a leading participant in the efforts to control and eliminate nuclear weapons," said Charles Weiner, MIT Professor Emeritus of the History of Science.

"Phil was a great physicist. His field was astrophysics, but he was interested in all of physics," said Marc A. Kastner, head of MIT's Department of Physics. "In addition, he was deeply committed to education, both at the undergraduate level and for younger students."

"He was a dear, dear person whose impact was not just on MIT, but on the world," said Weiner, who has been work-

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PHOTO / **DONNA COVENEY**

Looks like smooth sailing

Freshman Abby Carey and Alicia diFrancesca take a boat out on the Charles in what sailing master Fran Charles described as very windy conditions—or "blowing the dog off the chain!"—on Thursday, April 14. It was the women's third time out on the water.

Inaugural festivities feature art, technology

Sarah H. Wright
News Office

A display of light and sound will launch this week's festivities to honor the inauguration of Susan Hockfield, MIT's 16th president, and symbolize the inaugural theme, "UnCommon/InCommon."

"White Noise/White Light," designed by Meejin Yoon, assistant professor of architecture at MIT, will open in Kresge Oval on May 2 at 7 p.m. with comments by President Hockfield. "UnCommon" desserts—fried cheesecake, flavored creme brulees, napoleon station, and s'mores fondue—will be served.

Celebratory events throughout the week will include symposia on art and technology and on interdisciplinary research, a K-12 Educational Outreach Midway, a video retrospective of 2.007, MIT's famed robot design contest, and concerts by the MIT Symphony Orchestra and the MIT Concert Choir.

The inaugural ceremony will be held in Killian Court on Friday, May 6, at 2 p.m.

Originally commissioned by the city of Athens, Greece, and sited at the base of the Acropolis during the 2004 Olympics, "White Noise/White Light" is an installation comprised of a 50-by-50-foot grid of little rods that look neutral by day and magical by night, when they light up as people move among them.

Yoon, 32, conceived "White Noise/White Light" as a project at the intersection of "architecture, landscape architecture and environmental design" and an experience of theater in which partici-

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NEWS

FACULTY HONORS

Two untenured faculty members received the annual Edgerton Award.

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PRIZE INVENTIONS

The creator of HyperSonic Sound and the inventor of DRAM earn Lemelson-MIT awards.

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RESEARCH

BIRD BRAINS

Scientists begin to understand how finches learn to sing.

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LIGHT FANTASTIC

An MIT engineer and his colleagues have created plastic that can be shaped by light.

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ARTS

SACRED SOUNDS

The MIT Wind Ensemble will showcase music written for Pope John Paul II.

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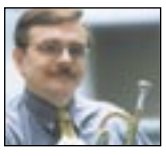
TRUMPETING JAZZ

The Aardvark Jazz Orchestra plans a little 'Trumpet Madness' for its spring concert with Mark Harvey.



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Symposia explore reaches of science

MIT has seized the opportunity offered by the inauguration of Susan Hockfield to hold two symposia in which prominent members of the faculty will discuss interdisciplinary research, and art and technology.

On Tuesday, May 3, four panelists will speak on the topic "Interdisciplinary Research at MIT: Making Uncommon Connections."

Penny Chisholm, the Lee and Geraldine Martin Professor of Environmental Studies, will discuss her research on microorganisms, the significant role they play in shaping our planet and the diverse fields that play key roles in studying them.

"Only through interdisciplinary research that combines microbiology, ecology, genomics, oceanography, physiology and applied mathematics can we understand these complex microbial systems—upon which all life depends," she said.

Chisholm was part of the team that in 1985 discovered the smallest known photosynthetic cell and the most abundant microbe in the sea. That microbe is now used as a model system for understanding global processes from the genome to the ocean.

Chisholm, whose symposium talk is titled "Marine Microbes: Tiny Cells, Global Impact," will be joined by three other panelists. Rosalind Williams, the Metcalfe Professor of Writing, will describe "The Multidisciplinary Forest of MIT: From Twigs to Canopy"; Moungi Bawendi, professor of chemistry, will discuss "Tiny Crystals: The Path From Science to Technology"; and Alex Slocum, professor of mechanical engineering, will give a talk titled "Big Iron to Little Silicon."

Alice P. Gast, vice president for research and associate provost, will moderate.

On Wednesday, May 4, "Art and Technology" will be the topic of discussion. Associate Provost for the Arts Alan Brody will moderate a talk with director Jay Scheib, assistant professor of music and theater arts; artist Krzysztof Wodiczko, professor of architecture and director of the Center for Advanced Visual Studies; and composer Evan Ziporyn, the Kenan Sahin Distinguished Professor of Music.

"There's been a lot of discussion in recent years about the ways in which technology has informed the production of art, as well as the ways in which artists and engineers have experienced the collaborative process," Brody said. The panel, he said, will look at how artists from three very different disciplines—theater, the visual arts and music—have used old and new technologies in "the service of their vision," how those technologies have facilitated the work and how they may have created unforeseen problems.

Each panelist will discuss technology as it relates to his own field and interests, then participate in a panel discussion moderated by Brody.

Scheib, who will discuss one of his current projects, "The Flight out of Naturalism," has written about his interest in the emergence of "reality television" in the wake of the Sept. 11 attacks: "In the time which followed, Reality television ratings skyrocketed. Everywhere, thirst for the Real, the cruelties inherent in our Real lives—hunger for something actual in the face of so much fiction masquerading as fact, was overwhelming. It was in this environment that my own flight into naturalism evolved."

PHOTO / **DONNA COVENEY**

Known for such provocative works as this 1998 video projection onto Bunker Hill Monument, Professor Krzysztof Wodiczko will be on the panel of Wednesday's 'Art and Technology' symposium.

Wodiczko, who is renowned internationally for his large-scale slide and video projections on architectural facades and monuments (including the Bunker Hill Monument in 1998), is working on a projection in Barcelona that will use a prominent city monument as a vehicle for two-way, real-time communication with the public. He will speak on "Art, Technology and Public Space" and will present two short videos.

Ziporyn, a composer and clarinetist whose work draws equally from world and classical music, the avant garde and jazz, has composed numerous works combining Indonesian orchestration (gamelan) with western instruments and electronics. He plans to talk about how traditional "pencil and manuscript paper" composers have or have not adapted to the technical wizardry now available.

Both symposia will take place from 4 to 6 p.m. in the Stata Center's Kirsch Auditorium and are free and open to the MIT community.

INAUGURATION EVENTS

Monday, May 2

7 p.m. Kresge Oval	Opening of 'White Noise, White Light'

Tuesday, May 3

Noon–2 p.m. Walker Memorial	Reception hosted by Working Group on Support Staff Issues
4–6 p.m. Kirsch Aud. Stata Center	Symposium, Interdisciplinary Research: Making Uncommon Connections

Wednesday, May 4

11 a.m.–2 p.m. Stata Center Student Street	K–12 Midway
4–6 p.m. Kirsch Aud. Stata Center	Symposium, Art & Technology

Thursday, May 5

1–3 p.m. Room 10-250	Learning by Design, 2.007—a retrospective look at how the contest and the machines have evolved, with a sneak preview of this year's hopefuls
3:30–4:30 p.m. Room 35-303	CSAIL Robots Competition
8 p.m. Kresge Aud.	Inaugural Concert, MIT Symphony Orchestra

Friday, May 6

2 p.m. Killian Court	Inaugural Ceremony
3:30 p.m. Killian Court	Community Reception

Saturday, May 7

3–7 p.m. Kresge Lawn/ Athletic Fields	Block Party
8 p.m. Kresge Aud.	MIT Concert Choir
10 p.m. Kresge Lobby	Closing reception for 'White Noise, White Light'

For more information, visit web.mit.edu/inauguration/

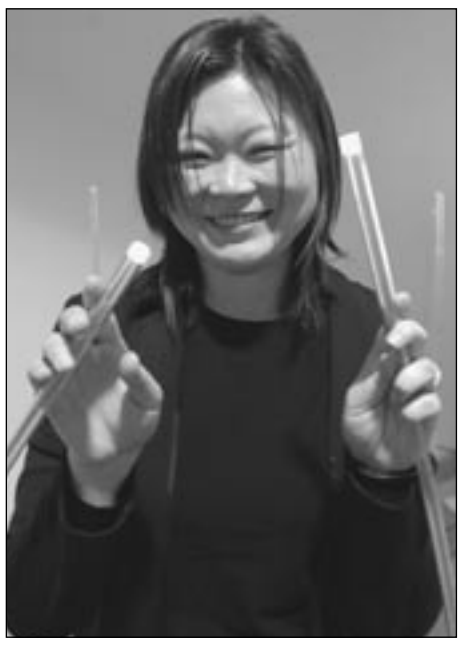

PHOTO / **DONNA COVENEY**

Assistant Professor J. Meejin Yoon of architecture shows off some of the light rods that will be in her exhibit, 'White Noise/ White Light,' which opens on Kresge Oval Monday.

UNCOMMON

Continued from Page 1

pants of all ages become performers, she said.

"It's an uncommon experience and therefore suits the theme of the inaugural events. It can create a sense of play or a sense of solemnity, depending on the individual. But, more importantly, it is about engaging the multiple," Yoon said.

"White Noise/White Light" comes to life as participants walk among the fiber optic stalks, which react both by lighting up and by triggering a gentle murmur of white noise. Loudspeakers hidden beneath the "White Noise" floor provide the "whoosh" and "shhh" that add up, in Yoon's plan, to a "sonic refuge" from urban cacophony.

Each person's "journey" through the grid is unique: The light intensifies or wanes, the whooshings and shss-ings rise or fade depending upon whether the grid is traversed with care or klutzy abandon. During "White Noise/White Light's" 30-day stay in Athens, children particularly loved to play in the field, Yoon said.

But Yoon hopes that participants will go beyond the "singular" experience of her work and engage with her vision of cumulative and shared human experience—of all that we have in common.

By combining "white light, being a full spectrum of color, and white noise, being a full spectrum of frequencies within the range of human hearing, the design expresses the idea of accumulation, of the many in relation to the one," Yoon said.

"White Noise/White Light" is open to all ages, including children of any height. "It's a bit unfriendly to stiletto heels, because of the cracks in the wooden deck," Yoon noted.

The public is invited to view and walk through "White Noise/White Light" from dusk to 11 p.m. May 2 through May 7. Admission is free. From May 2-7, free evening parking will be available in MIT's West Garage Annex, 125 Vassar St., one block from the installation.

In addition to the outdoor installation of "White Noise/White Light," an exhibition of Yoon's works, titled "Rock, Paper, Scissors: Projects by MY Studio," will be on view at MIT's Wolk Gallery (Room 7-338, enter at 77 Massachusetts Ave.) through Sept. 16.

More 'UnCommon' events

- MIT has a tradition of reaching out to teachers and students across the country, and the K-12 Educational Outreach Midway will highlight 20 programs now developing innovative teaching methods or technologies on Wednesday, May 4, from 11 a.m. to 2 p.m., in the Stata Center Student Street.

  Participating programs include the Biology Department's High School Outreach, the Edgerton Center's You GO Girl, InvenTeams.

- Got a taste for bots? Inaugural week offers two views of MIT's famed robot-design world on Thursday, May 5. A video history of the mother of all robot contests, 2.007, will be presented in Room 10-250 from 1 p.m. to 3 p.m., and an insider's view of a robotics classroom will be offered in Building 35-303 from 3:30 to 4:30 pm.

HOW TO REACH US

News Office
Telephone: 617-253-2700
E-mail: newsoffice@mit.edu
http://web.mit.edu/newsoffice

Office of the Arts
http://web.mit.edu/arts

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Editor
Kathryn O'Neill

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News Office Staff

Director ..... Arthur Jones
Senior Communications Officer/
Science Writer ..... Denise Brehm
News Manager/Editor ..... Kathryn O'Neill
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Computer Support Assistant ..... Roger Donaghy

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Hockfield takes place of honor

When Susan Hockfield is inaugurated on Friday, May 6, she will officially take her place among the respected leaders who have guided the Institute over the years, including the three living former MIT presidents, Charles M. Vest, Paul E. Gray and Howard W. Johnson.

Howard W. Johnson, president from 1966 to 1971

Howard W. Johnson, 82, became president of MIT after serving seven years as professor and dean of the Sloan School of Management. At the helm during the height of the political and social ferment of the late 1960s, he gained respect for listening to all sides and for combining progressive views on issues such as The Vietnam War and the environment with expertise in management.

Johnson described those times in his book, "Holding the Center: Memoirs of a Life in Higher Education (MIT Press, 2001).

Johnson oversaw such major initiatives as MIT's creation of the Whitehead Institute and the opening of several new residence halls (Eastgate in 1967, Random Hall and the east wing of McCormick Hall in 1968 and MacGregor House in 1970). MIT faculty members also received Nobel Prizes in three consecutive years during his tenure: Har Gobind Khorana in 1968, Salvador E. Luria in 1969 and Paul A. Samuelson in 1970.

Howard W. Johnson

Johnson served as chair of the MIT Corporation from 1971 to 1983. He has also served on numerous governmental panels and as a trustee or director of such institutions as the Federal Reserve Bank of Boston, Radcliffe College, the Museum of Fine Arts and the Boston Symphony Orchestra. He has been a Corporation Life Member Emeritus since 1997.

Paul E. Gray, president from 1980 to 1990

Paul E. Gray, 73, has been at MIT almost continously for more than half a century. He earned bachelor's, master's and doctoral degrees in electrical engineering starting in 1954 and then rose through the faculty ranks to become professor in 1967.

Paul E. Gray

Gray held several administrative roles ranging from associate dean to chancellor before becoming MIT's 14th president.

Among the programs Gray helped establish are the Undergraduate Research Opportunities Program and the Leaders for Manufacturing Program.

He encouraged undergraduate curriculum reforms in the 1980s that strengthened the humanities, social sciences and biology.

Gray was committed to increasing opportunities for minorities and played a key role in establishing MIT's annual Dr. Martin Luther King Celebration.

After stepping down as president, Gray served as chair of the Corporation from 1990 to 1997 and then returned to his role as professor of electrical engineering, a post he still holds.

Susan Hockfield, president from 2004 to present

Susan Hockfield, a noted neuroscientist and former provost of Yale University, is the first life scientist to lead MIT. She joined the Yale faculty in 1985 and was named full professor in 1994. Hockfield was dean of Yale's Graduate School of Arts and Sciences (1998-2002) before becoming provost. She became MIT's 16th president on Dec. 6, 2004.

As graduate school dean, Hockfield revitalized the administration of the school and addressed longstanding problems in academic, extracurricular and financial support for students. As provost, she advanced Yale's major initiatives in science, medicine and engineering, including a $500 million investment in facilities. She also encouraged collaborative work among the sciences, humanities and social sciences throughout the university.

Hockfield's research has focused on the development of the mammalian brain and on glioma, a deadly form of brain cancer. At Yale, she was the William Edward Gilbert Professor of Neurobiology; she now holds an MIT faculty appointment as professor of neuroscience in the Department of Brain and Cognitive Sciences.

Hockfield earned her undergraduate degree from the University of Rochester and the Ph.D. from the Georgetown University School of Medicine. She now lives in Cambridge with her husband, Thomas N. Byrne, M.D., and their daughter, Elizabeth.

Charles M. Vest, president from 1990 to 2004

Charles M. Vest, 64, is the second-longest-serving president in MIT's history. Vest oversaw initiatives in new methodologies for education such as OpenCourseWare, several new degree programs and a major campus construction program.

One of Vest's key achievements was focusing broader public attention on issues of education and research policy. He chaired the President's Advisory Committee on the Redesign of the Space Station and the U.S. Department of Energy Task Force on the Future of Science Programs as well as the Association of American Universities. He continues to serve on the President's Council of Advisors on Science and Technology and recently finished work on the Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction. His 2004 book, "Pursuing the Endless Frontier: Essays on MIT and the Role of Research Universities," explores significant issues facing academic institutions.

Charles M. Vest

Vest remains at the Institute as a faculty member in mechanical engineering (on sabbatical in 2005) and has accepted invitations for visiting lectureships at several universities here and abroad.

In an interview given just before she came to MIT, Susan Hockfield offered some of her thoughts on the presidency. For the entire interview, visit web.mit.edu/newsoffice/2004/president-interview.html.

Q: *What do see as the key challenges and opportunities facing MIT in the coming years?*

A: Over the past several decades, the revolutions in the physical and life sciences and engineering have created enormous opportunities on which we can build. Similarly, globalization provides new opportunities—and challenges—for scholars in economics, political science, management, humanities, the arts and architecture to make a better world. With its outstanding record of accomplishment in these areas, along with its distinctively collaborative culture, MIT is uniquely positioned to make enormous contributions.

The challenge is that other great universities have come to realize that in order to remain world-class, they need to invest in these areas of scholarship and become more like MIT. The competition for students, faculty and resources has, accordingly, intensified, requiring MIT to continue to reinvent itself to remain the preeminent institution for innovation across the entire spectrum of the five schools.

Q: *How will you work to bring out the best of MIT?*

A: I believe in building on strength. MIT has the strongest engineering school in the world, and I will work to be sure that tradition of preeminence continues. Each of the schools and activities at MIT must continue to be strong and distinctive. At the same time, we must look for opportunities where those strengths can be amplified through shared vision and shared work. As science, technology and management become more interdisciplinary, our engineering prowess provides an enormous opportunity for successful innovation and discovery that other institutions do not have. This is one of the most exciting opportunities I see as uniquely available at MIT.

Q: *How do you balance the traditional openness of universities to international students and the need for heightened national security?*

A: National security is a very real and very serious issue for all of us today. American universities have served as the gateway for some of the best minds on earth to join our nation's commitment to improving the lives of people around the world. Balancing these risks and opportunities requires insightful development of national policies that take into account the important role and distinctively open cultures of universities. MIT has had a powerful voice in the articulation of national policies, a tradition I will continue.

Q: *How does it feel to be the first woman president of MIT?*

A: It is a very great honor to be the first woman president of MIT, but it is as great an honor to be the first life scientist to serve in this role. I hope that my service in this position will give confidence to women and girls, as well as people from all backgrounds, to believe that they, too, can take on roles that perhaps have not previously been open to them.

Working Group on Support Staff Issues plans inaugural lunch

Sasha Brown
News Office

The Working Group on Support Staff Issues will have a formal role in inaugural festivities for the first time since its founding in 1975. The group is holding a luncheon on Tuesday, May 3, to give the MIT community a chance to meet and greet the new president.

The "Spring Garden"-themed lunch, served buffet-style with passed hors d oeuvres and canapés, will allow support staff and their guests to mingle together and to chat with President Susan Hockfield.

"Everybody is ecstatic about this," said Barabara Smith, a co-convener of the event.

The luncheon at Morss Hall is scheduled to take place over a period of two hours to allow all support staff time to come, sample the food, chat and listen to the music, which will be provided by performers from the Working Group's Artists Behind the Desk series, which features the work of a number of artists who are also MIT employees.

For the first hour, flutist and Research Support Associate in the Department of Biology Cindy Woolley, a member of the Silverwood Trio, will perform a selection of classical music with the cellist from her group. "It should be exciting," said Woolley, who has played the flute for more than 35 years. The second hour will feature the music of former MIT employee Francis Doughty, a classical guitarist.

Both the classical music and the garden theme were chosen based on the new president's preferences. "We asked what sort of music President Hockfield preferred," Smith said.

Throughout the room, there will be high-rise cocktail tables as well as sit-down round tables to offer guests a choice in seating. The flier invitations to the lunch were delivered on April 25 to the 1,600 support staff at MIT. Though the event is open to the community at large, the invitations are targeted to support staff and their guests.

Faculty honors two with Edgerton Award

Sasha Brown
News Office

Associate Professor Emma Teng of Chinese Studies in Foreign Languages and Literatures and Associate Professor Erik Demaine of Electrical Engineering and Computer Science received the Harold E. Edgerton Faculty Achievement Award at the April faculty meeting.

The meeting also addressed student discipline, faculty quality of life, Commencement and the upcoming inauguration of President Susan Hockfield.

The Edgerton Award, established in 1982, is given each year to one or more untenured faculty members for exceptional distinction in teaching and in research or scholarship.

Bruce Tidor, professor of bioengineering and computer science, announced the Edgerton Award winners on behalf of the selection committee, describing Demaine's work as, "highly interactive and collaborative, involving not only his own research students, but also co-authors from around the world…his work is accessible to experts and amateurs alike. Professor Demaine is a dynamic teacher who has developed two new subjects in data structures and computational geometry."

Tidor called Teng a "prolific young scholar who has built her considerable reputation by bringing together two separate fields of literary and cultural study—Chinese and Asian-American—while also melding historical and literary perspectives." He noted her immense popularity among students. "Her teaching incites strong enthusiasm for learning," he said.

Both Teng and Demaine thanked the faculty for the honor.

"Thank you so much for nominating me," said a smiling and surprised Teng.

Also at the meeting, the co-chair of the Ad Hoc Committee on Faculty Quality of Life, Mechanical Engineering Professor Gareth McKinley, gave a report on some of the most pressing issues facing MIT faculty.

Convened in the fall of 2003, the committee held a series of meetings and deployed a survey to get at the faculty's main concerns, which seem to center on "managing the interface between work and home life," said McKinley.

Erik Demaine

Emma Teng

For a complete summary of the committee's report, go to web.mit.edu/fnl/vol/174/fql.htm.

Derek Rowell, professor of mechanical engineering and former chair of the Committee on Discipline, gave the breakdown of offenses requiring disciplinary action during the 2003-04 school year.

There were a total of 13 hearings for eight men and five women. Two were graduate students and the others undergraduates. The most common offenses were academic misconduct. The committee suspended seven students and revoked the degree of a graduate student who was accused of plagiarizing large portions of a thesis.

Faculty also heard discussion of Commencement protocols as well as the schedule for the May 6 inauguration. "We are giving a party and you are all invited," joked Professor Steven Lerman, chair of the Inauguration Planning Committee.

Champy: Rethink engineering

Lois Slavin
MIT Engineering Systems Division

MIT needs to reexamine its undergraduate engineering curriculum, James A. Champy asserted in delivering the annual Charles L. Miller Lecture at Bartos Theater on April 21.

"Consider creating an undergraduate core engineering program that will be taught across all engineering departments and examine whether this should be done in a five-year program," said Champy, chairman of consulting for Perot Systems Corp. and an MIT alumnus.

Champy's talk "In Charlie's Vision: The Future of Engineering at MIT" was given in honor of Miller, who headed MIT's Civil and Environmental Engineering Department from 1962 to 1969. The lecture was sponsored jointly by MIT's Engineering Systems Division and the Department of Civil and Environmental Engineering.

Champy said that his work as a management consultant has shown him the need for MIT to integrate broader skills and attributes into its engineering disciplines. "The problems and opportunities in which MIT is engaged today demand an increased level of interdepartmental collaboration," he said.

Champy characterized MIT's School of Engineering as a great institution, but one facing increased competition for students, faculty, research funding and philanthropy.

"An engineering curriculum must have disciplines that develop our students' deep understanding of organizational behavior and the skills to deal with and within flawed organizations—and maybe fix them," he said. Champy questioned whether the traditional four-year undergraduate engineering program is sufficient.

Professor Daniel Roos of engineering, who delivered last year's Miller lecture, introduced Champy. Roos noted that Miller not only revolutionized the department, but the profession itself during his tenure.

Conference addresses neuroethics

Lori Valigra
Special to the MIT News Office

Scientists, ethicists and members of diverse religions debated the difficult questions raised by advances in neuroscience at an MIT conference held April 17-19.

The conference, "Our Brains and Us: Neuroethics, Responsibility and the Self," drew 40 speakers and 130 attendees to a broad range of sessions that defined the evolving field of neuroethics, examined the concept of the self, debated moral agency and free will, discussed legal and religious ramifications and revealed technological advances such as brain-computer interfaces. The conference was organized by the American Association for the Advancement of Science, the MIT Brain and Cognitive Sciences Department, the MIT Technology and Culture Forum and the Boston Theological Institute.

"Our primary goal was to promote a dialogue among people who were neuroscientists and those who were not, but who wanted to look at what ethical issues neuroscience raises," said Stephanie Bird, former special assistant to the provost and vice president for research at MIT. Bird spoke on a panel titled "Neuroscience and Neuroethics."

"The field has evolved to a point where there is an enormous amount of hype about the extent to which new methods in neuroscience enable high levels of control of people," said Stephan Chorover, professor of psychology in the MIT Brain and Cognitive Sciences Department. But the complexity of humans and the brain will make it difficult for advances in neuroscience to accurately control or predict human action, he said.

Another concern about scientific study of the brain is that biology will strip life of its meaning, said Steven Pinker, professor of psychology at Harvard University and a former professor at MIT. "The fear of nihilism is commonly perceived as a major moral risk of neuroscience," he said.

Paul Root Wolpe, a professor in the Department of Psychiatry at the University of Pennsylvania and a bioethics fellow, said that any therapy that can alter the brain or behavior will be based on cultural, religious and moral judgments that are dictated by society. He added that society also defines what is normal. "Integrating technology into humans may be OK," he said, such as brain-computer interfaces that can allow a paralyzed person to communicate.

PHOTO / **DONNA COVENEY**

Make vrrrroooooom for Motorsports

Members of the MIT Motorsports team gather around their newest effort, a racecar for the annual Society of Automotive Engineers competition, which will be held in Detroit in May. The vehicle was unveiled on Wednesday, April 20, and displayed for the day in Lobby 10. Team members from left are Joe Audette, senior; Alex Soo, freshman; Ehsan Farkhondeh, senior (at the wheel); Josh Dittrich, freshman; Chris Graff (G); and Keith Durand, senior.

Two awarded Lemelson-MIT prizes

The next time you think you hear voices in your head, you may be right, thanks to Elwood "Woody" Norris. Norris has just received the $500,000 Lemelson-MIT Prize for his inventions, including HyperSonic Sound, which enables sound to be targeted to an individual listener.

"Woody Norris is a classic independent inventor. His curiosity is unbounded and spans many fields," said Merton Flemings, director of the Lemelson-MIT Program and the Toyota Professor Emeritus in MIT's Department of Materials Science and Engineering.

Norris was honored at the 11th annual Lemelson-MIT awards ceremony held April 22 at the Oregon Museum of Science and Industry in Portland, Ore.

At the same ceremony, Robert Dennard received the $100,000 Lemelson-MIT Lifetime Achievement Award for designing a new way to arrange transistors and capacitors onto a single silicon chip. The invention—dynamic random access memory or DRAM—transformed the microelectronics industry in the early 1970s, and today is still the most popular form of computer memory.

STEM CELL

Continued from Page 1

stem cells, and donors should be informed that they have the right to withdraw their consent at any point before a stem cell line is derived.

- No payments should be made to donors.
- The ESCRO committee should maintain a registry of stem cell lines that includes proof of informed consent and the medical history of donors.
- Human embryonic stem cells should be introduced into nonhuman mammals only under circumstances where no other experiment can provide the information needed.

The guidelines also address how far scientists should go in mixing human and animal cells to create so-called chimeras, which researchers may need to do in order to test the therapeutic potential of human stem cells in animal models. They say no animal embryonic stem cells should be transplanted into a human blastocyst, and approval by an ESCRO committee should be secured before any human embryonic stem cells are put into an animal. Also, no animal into which human embryonic stem cells have been introduced should be allowed to breed. No human embryonic stem cells should be put into nonhuman primates.

The executive summary is available for downloading and the full report can be browsed at the National Academies Press web site (books.nap.edu/catalog/11278.html). Copies of the guidelines will be available for purchase later this spring from the press.

The National Academies consist of the National Academy of Sciences, the National Academy of Engineering, the Institute of Medicine, and the National Research Council.

Photographer Frankel honored

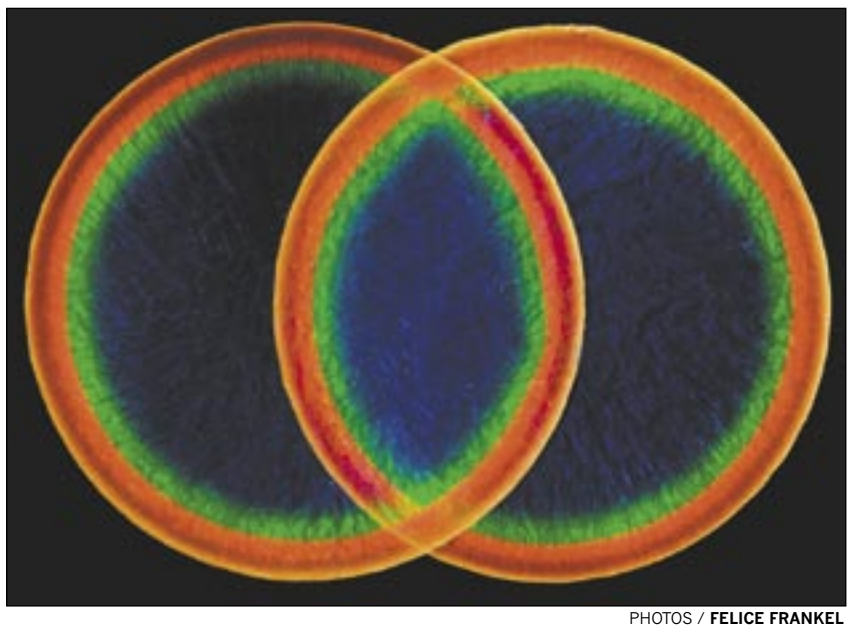
Science photographer Felice Frankel, a research scientist in the School of Science, has been named the 2005 Honorary Fellow of the Society for Technical Communication.

In praising Frankel's work, STC stated, "Your stunning images make science accessible to a broad audience, deepening our understanding and appreciation of your subjects and expanding the boundaries of technical communication."

The STC is a professional organization dedicated to advancing the arts and sciences of technical communication. With more than 17,000 members, STC is the largest organization of its kind in the world.

For more than 30 years, STC has been conferring this honor on individuals who are not members of the society but who have achieved eminence in the field. Among previous honorary fellows are Stephen Jay Gould, Maxine Singer, Buckminster Fuller and MIT's Timothy Berners-Lee.

Frankel plans to attend STC's 52nd Annual Conference in Seattle, Wash., May 8-11, to accept the award and discuss her work.



PHOTOS / **FELICE FRANKEL**

Felice Frankel has been honored for such images as the one at top of a drop of ferrofluid, which is magnetite suspended in oil. The ferrofluid is on a slide on top of a yellow slip of paper, and magnets under the paper are pulling the magnetite particles into place. The photo above is of block copolymers on two overlapping 1 cm-wide glass discs.

Birds' brains reveal source of songs

Cathryn Delude
Special to the MIT News Office

Scientists have yearned to understand how the chirps and warbles of a young bird morph into the recognizable and very distinct melodies of its parents. Neuroscientists at the McGovern Institute for Brain Research at MIT now have come one step closer to understanding that process. They've shown for the first time how a particular brain region in birds serves as the source of vocal creativity.

"It's an extraordinary finding," says Sarah Bottjer of the University of Southern California. "Here's an organism that enables a direct investigation of how animals learn motor activities."

The songbird's creative, trial-and-error type of learning provides an ideal model for studying similar processes in humans, such as how a baby's babble takes on the conversational cadences and recognizable syllables of mama and papa. Likewise, the brain pathways involved in birdsong have a human counterpart, the poorly understood basal ganglia circuit, so birds may have something to teach us about our own brains. What researchers learn from birds may eventually apply to human diseases that affect motor abilities, such as Parkinson's disease.

"The question we're trying to answer is how a young bird learns its song," says Professor Michale Fee of MIT's McGovern Institute about his recent study, which was published online in advance of the May issue of the free access journal, Public Library of Science Biology. "We've known there are several brain areas involved: a motor circuit for producing the song, and a learning circuit, called the AFP (for anterior forebrain pathway), that sends its output to the motor system."

Normally, the young zebra finch nursery resounds with ever-new, imperfect variations of the adult songs. Gradually, the youngsters' songs become less variable and more true to the old standards. Some years ago, Bottjer had observed that disabling a young finch's AFP circuit stopped the learning in midstream. The bird still sings, but never learns the right song. To explain this effect, scientists theorized that the AFP circuit helps the juvenile compare its immature efforts with its parent's (usually the father's) example. That hypothesis, however, did not explain how the little bird's babble arose.

"We framed the question in a different way," Fee says of his research with postdoctoral fellow Bence P. Ölveczky and graduate student Aaron Andalman. "We said, this young bird is being creative, exploring many different sounds through trial and error. We hypothesized that the AFP is the source of this creativity."

To test this theory, Fee's team studied finches that were just old enough to begin their vocal explorations. The researchers temporarily inactivated the part of the AFP connecting to the motor system used in producing songs. That inactivation shut down all the variability, temporarily stranding the young finch with an immature version of the song. These results suggested that the AFP circuitry itself causes the juvenile bird's experimentation.

Intelligent plastics change shape with light

Elizabeth A. Thomson
News Office

Picture a flower that opens when facing the sunlight. In work that mimics that sensitivity to light, an MIT engineer and his German colleagues have created the first plastics that can be deformed and temporarily fixed into shape by light.

These programmed materials change shape when struck by light at certain wavelengths and return to their original shapes when exposed to light of specific different wavelengths.

The discovery, to be reported in the April 14 issue of Nature, could have potential applications in a variety of fields, including minimally invasive surgery. Imagine, for example, a "string" of plastic that a doctor could thread into the body through a tiny incision. When activated by light via a fiber-optic probe, that slender string might change into a corkscrew-shaped stent for keeping blood vessels open.

What about staples that open at a flash, or paper clips that relax when you don't need them anymore? Again, light could do the job.

"This is really a new family of materials that can change from one shape to another by having light shined on them," said Institute Professor Robert Langer of MIT.

Langer co-authored the paper with Andreas Lendlein, Hongyan Jiang and Oliver Jünger. Lendlein, a former MIT visiting scientist, is institute director at the GKSS Research Center in Teltow, Germany. With Jiang and Jünger, he is also affiliated with the Institute for Technology and Development of Medical Devices at Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen University in Germany.

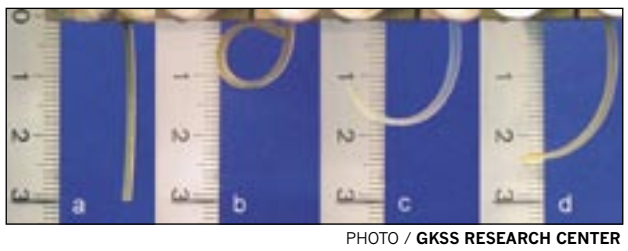


PHOTO / **GKSS RESEARCH CENTER**

A sample of 'smart' plastic (a) is elongated and irradiated on its right side with ultraviolet light, forming a temporary shape (b). Photos (c) and (d) show the plastic recovering its original shape after exposure to UV light of a different wavelength. Scale is in centimeters.

Plastics with "shape-memory"—ones that change shape in response to a temperature increase—are well known. In 2001, Langer and Lendlein were the first to report biodegradable versions of these materials in the Proceedings of the National Academy of Sciences.

A year later, the researchers introduced thermoplastic, biodegradable shape-memory polymers and demonstrated a nifty medical application—a smart suture that ties itself into the perfect knot. That work was described in the journal Science; mnemoScience GmbH of Aachen, Germany, was developed to commercialize the discovery.

"Now instead of heat, we can induce the shape-memory effect in polymers with light," said Lendlein.

Key to the work: "molecular switches," or photosensitive groups that are grafted onto a permanent polymer network. The resulting photosensitive polymer film is then stretched with an external stress and illuminated with ultraviolet light of a certain wavelength. This prompts the molecular switches to crosslink, or bind one to another.

The result? When the light is switched off and the external stress released, the crosslinks remain, maintaining an elongated structure. Exposure to light of another wavelength cleaves the new bonds, allowing the material to spring back to its original shape.

The team notes that in addition to elongated films, a variety of other temporary shapes can be produced. For example, a spiral can be created by exposing only one side of the stretched sample to light. So "while the deformation is well-fixed for [the irradiated] side, the other side keeps its elasticity. As a result, one contracts much more than the other when the external stress is released, forming an arch or corkscrew spiral shape," the authors write.

The team has also shown that the temporary shapes are "very stable for long times even when heated to 50 degrees C."

"In our Nature paper, the basic principle of photo-induced shape-memory polymers is explained. We are currently developing medical and industrial applications using their photosensitivity," Lendlein said.

The work was funded in part by a BioFuture Award from the Bundesministerium für Bildung und Forschung, Germany, and a fellowship from the Alexander von Humboldt Foundation.

MORRISON

Continued from **Page 1**

ing to document Morrison's life through archival materials and oral-history interviews.

A member of the MIT faculty since 1964, Morrison has held the rank of Institute Professor, the highest honor awarded by the MIT faculty and administration, since 1973. The title is reserved for those who have demonstrated exceptional distinction by a combination of leadership, accomplishment and service in the scholarly, educational and general intellectual life of the Institute or wider community.

He was among the first scientists (in 1959) to call upon the professional community to begin a coordinated search for interstellar communications using a microwave search. His many publications and speeches, beyond research and astronomy, center on two large issues: nuclear and conventional war and American policy; and the teaching and public understanding of physics and science in general. He has authored or co-authored many books on these subjects, including "The Price of Defense," which he co-authored with five other students of the arms issue. The book, published in 1979, was the first to propose a detailed alternative defense posture for the United States.

A regular reviewer of books on science for Scientific American since 1965, Morrison had also narrated and helped script films on science for Charles and Ray Eames. He appeared widely on radio and on British, Canadian and American television in a number of science programs and series, most visibly as author-presenter (with his wife, the late Phylis Morrison) of a six-part national Public Broadcasting System series, "The Ring of Truth," which first aired in 1987. He and his wife co-authored a book, "The Ring of Truth: An Inquiry Into How We Know What We Know" (Random House, 1987) as a companion to the series.

Kastner, the Donner Professor of Science, noted that Morrison "was spectacular at explaining physics to the public, too. He was the only person I ever knew who spoke not just in compete sentences, but complete paragraphs. Phil was a wonderful colleague and will be greatly missed."

"He was an inspiration not as a scientist who also did other things, but as someone who defined his role as a scientist by being involved in these other things," Weiner said.

Philip Morrison was born in Somerville, N.J., in 1915. He attended Pittsburgh public schools and received the B.S. degree from the Carnegie Institute for Technology in 1936. In 1940 he received the Ph.D. in theoretical physics from the University of California at Berkeley, under the supervision of J. Robert Oppenheimer.

For the next two years he taught physics at San Francisco State College and at the University of Illinois before joining the Manhattan Project. In 1946, Morrison joined the physics faculty at Cornell University, where he remained until he came to MIT in 1964.

From 1943 to 1946 Morrison was associated with the Manhattan Project, which was responsible for the development of the first atomic bomb. He joined the Metallurgical Laboratory of the Manhattan Project at the University of Chicago toward the end of 1942. He was a physicist and group leader there and later at Los Alamos from 1942 to 1946.

In 1945, it was Morrison, riding in the back seat of an automobile, who brought the bomb's plutonium core from Los Alamos to the New Mexico desert site for the first test. He also was at the island air base of Tinian, from which two bombs were launched against Japan. He later witnessed the aftermath of the explosion at Hiroshima in a visit immediately following the war.

PHOTO / **DONNA COVENEY**

Institute Professor Philip Morrison, a distinguished theoretical astrophysicist who had been on the MIT faculty since 1964, died Friday, April 22.

In 1984, Morrison's faculty colleagues named him the James R. Killian Jr. Faculty Achievement Award Lecturer for the academic year 1984-85. The citation read, in part, "Philip Morrison is more than a distinguished scholar. He represents an attitude, a way of life, a symbol for what one might call 'joy of insight' or 'thirst for knowledge.' No one has better demonstrated, or rather embodied, what it means to the human soul to perceive or recognize a new scientific discovery or a new theoretical insight. Scientific knowledge and understanding is not a purely cerebral affair; it is soaked with emotion, excitement, and nervous tension, as everyone knows who has heard Philip Morrison talk…He has a gift for language and a wide-ranging intellect which allow him to draw upon insights from different fields to help illuminate a subject."

His memberships included the American Physical Society (fellow), the Federation of American Scientists (chairman, 1973-76) the American Astronomical Society (council, 1977-79), the International Astronomical Union, the National Academy of Sciences, the American Association of Physics Teachers, the American Academy of Arts and Sciences and the American Philosophical Society at Philadelphia.

Among his many awards are the Pregel Prize of the New York Academy of Sciences, the Babson Prize of the Gravity Foundation, the American Association for the Advancement of Science Westinghouse Science Writing Award, the Oersted Medal of the American Association of Physics Teachers, the Priestly Medallion of Dickinson College, the Presidential Award of the New York Academy of Sciences, 1980; the Public Science Medal of the Minnesota Museum of Science, the American Institute of Physics' Andrew Gemant Award and the Wheeler Prize (with Phylis Morrison) of the Boston Museum of Science.

He is survived by his stepson, Bert Singer, and by Singer's wife, Angela Kimberk. A private service is planned.

A celebration of his life will be held at MIT at a later date.

Acemoglu wins Clark Medal

Sarah H. Wright
News Office

Professor Daron Acemoglu of the Department of Economics has received the prestigious John Bates Clark Medal, awarded every two years to an American economist under the age of 40 for making a significant contribution to economic thought and knowledge.

The Clark Medal, eminent in its own right, has proven a predictor of future Nobel laureates: Of the 29 Clark medalists, 11 have gone on to win the Nobel.

The American Economic Association, which presents the medal, cited Acemoglu for his "valuable contributions to several distinct fields, starting with labor economics and successively moving to macroeconomics, institutional economics and political economy."

Acemoglu, 37, has most recently focused on the role of political institutions in economic development. His current work explores the links among political structure, legal and market institutions, and a nation's long-run rate of economic growth. It takes into account the differing effects of institutions established by colonial powers in North America, South America and Africa on economic development in countries in those regions.

Acemoglu received the B.A. degree from the University of York, U.K., and the M.Sc. and Ph.D. degrees at the London School of Economics. He came to MIT in 1993, was promoted to full professor in 2000 and was named the Charles P. Kindleberger Professor of Applied Economics in 2004.

Acemoglu is the fifth member of the present Economics Department to receive the Clark Medal. The first was Paul A. Samuelson, Institute Professor Emeritus, who received the award in 1947. Professor Samuelson and Institute Professor Robert M. Solow, who won in 1961, both received Nobel prizes. The Clark Medal was awarded to Professor Jerry A. Hausman in 1985 and to professor emeritus Franklin M. Fisher in 1973.

MIT builds bridge to Milan

MIT has entered into a partnership with Milan Politecnico, Italy's top engineering school, to foster collaboration between the two schools in the fields of materials science, bioengineering and mechanical engineering.

MIT President Susan Hockfield signed an agreement with Dr. Gianfelice Rocca, chairman of Techint Group, on April 14 establishing the Roberto Rocca Project. The project honors Rocca's father, the late Dr. Roberto Rocca, who was an alumnus of both the Politecnico and MIT.

According to Serenella Sferza, co-director of the MIT-Italy Program, the project will provide $250,000 a year for a renewable five-year period. Funding will be available for Politecnico postdocs and visiting students at MIT, but also for research internships for MIT students at the Politecnico and for startup collaborations between MIT and Politecnico faculty. In the coming weeks, the project will solicit MIT faculty to submit proposals for seed funding.

The project will be administered by the MIT-Italy Program in conjunction with the Project Advisory Board. For more information, visit web.mit.edu/mit-italy/partnerships/rocca.html.

CLASSIFIED ADS

Members of the MIT community may submit one classified ad each issue. Ads can be resubmitted, but not two weeks in a row. Ads should be 30 words maximum; they will be edited. Submit by e-mail to ttads@mit.edu or mail to Classifieds, Rm 11-400. Deadline is noon Wednesday the week before publication.

FOR SALE

Professional 9-ft Imperial pool table (slate bed), 2 yrs old, red felt, black/chrome frame, mint cond., $600. Fold & Roll tennis table, mint cond., $75. fx@mit.edu or 253-4293.

Dining set w/4 chairs, $100. Exec. table, $95. Computer table, $50. Wood folding computer table, $30. Bookcase, $40. Braided carpet set, $30. Twin bed, $30. Loida at 617-916-1708, lmorales@mit.edu.

VEHICLES

2004 Mercedes Benz C230, supercharged. 15K. Silver/black leather. Sunroof, CD, traction control. Extra CLK OEM alloy wheels & snow tires. 33+ mpg mixed commute. $25,000. cheever@mit.edu.

1993 Mercury Sable 4-dr sedan, maroon, 3.8L engine, 92K, clean and good running condition. $1,500/bst. 781-981-3550.

HOUSING

Martha's Vineyard: 4BR Chappaquiddick house on 1 acre. Newly renovated. 1 mile to beach, 3 miles from Edgartown. June through Sept. $900–$1,100/week. David at 781-981-5087, 603-654-5513.

Roxbury near Fort Hill: 2-BR apt. in owner occupied, 3-family, quiet house. Back deck, hdwd floors, large reception area. Close to T. Avail. now. $1,350. dlopes@mit.edu or 617-445-1154.

Newton: sabbatical home avail 9/05, period negotiable. Bright contemporary, 4-BR, 2.5-bath, study, hdwd floors, no lead, yard, quiet street, $3,000/mo. Suzanne-McLaugh@yahoo.com or 617-527-1466.

Gloucester: Victorian home. 2+BR, wrap-around porch, off-street pkg, w/d, cable TV. Close to comm. rail, Rt. 128. $3,000/Jul or $900/week. Melody at 978-282-9657, melody@MelodyTheArtist.com.

Newly renovated 3-BR apt for rent. All appliances, w/d, eat-in kitchen, front/rear balconies. Free cable/Internet, 8-min walk to MBTA. imills@mit.edu.

Bedford: 2BR ranch, 2 full baths, eat-in kitchen, finished basement, laundry room with W/D; Fenced yard, private drive. <2 miles from Rte. 128. $1,300 +utils. Jeanne at 781-275-4717.

Orient Hts, E. Boston: 2BR. apt. Lge waterfront deck, harbor view, 5-min. walk to Blue line. Easy commute to MIT. $1,000/mo., utl. not included. Marty at 781-981-2114 or millerick@ll.mit.edu.

2 rooms in 4 BR. Near MIT. Off-street pkg, w/d. $355/$295 +1/4 utility. Wyssie at Wyssieqsong@yahoo.com or 617-452-3286.

Arlington: Furnished rm in lge house nr public trans, pkg, kitchen privileges, w/d on premise; priv. refrig and TV. 781-648-7425.

Provincetown: waterfront cottage on bayside for rent pre-and-post season. Alum owned. ldp@alum.mit.edu or 617-497-5937. Pics/info: web.mit.edu/user/r/d/rdshydur/www/774.2.pdf. No agents.

Summer sublet wanted: Studio or 1 BR wanted for the Aug., Sept. amd poss. Oct. On or near campus. Mature female, admin. staff employee at MIT. Pam at 617-699-6893.

Summer sublet wanted: mature, serious, non-smoking Russian student. Speaks English, some Spanish. June–Aug. Room or studio close to subway (5-15 min. walk). goodfellow@rambler.ru.

WANTED

Carpool riders. Share driving, hours 7 a.m.–4 p.m. Leave from Londonderry, NH area. Janice at 253-9313 or ahern@mit.edu.

STUDENT POSITIONS

Positions for students with work study eligibility.

Center For Family Connections seeks content updater to input text and graphics onto web. Approx. 30-50 hours at $24/hr. Send resume, references to Caitlin Fitzgerald at caitlinf@kinnect.org.

Media and Technology Charter High School seeks English/math tutors for summer academy, 7/18–8/19, M–Th, 7:45 a.m.–1 p.m.

Trainings: 6/7 and 6/21. $17/hr. Bob Hill at bob.hill@matchschool.org.

Aero-astro sks student to create CD promoting model rocket design/build/fly high school program. Basic understanding of rocket propulsion and design, exp w/computer presentation programs. Hours flexible, salary negotiable. pwyoung@mit.edu.

Jumpstart sks adv desktop and network support technician. 1–2 years experience/knowledge in help-desk support, phone systems technologies, Microsoft pkgs, ghost imaging, networking protocols, Windows XP/Windows 2000 server certs. Letter, resume to jobs@jstart.org.

Professor brings papal music to Wind Ensemble

Music composed by Institute Professor John Harbison and commissioned by the late Pope John Paul II to open the 2004 Papal Concert of Reconciliation will lead the April 29 program presented by the MIT Wind Ensemble on Friday, April 29. Fred Harris, lecturer in music, will direct.

"Abraham," Harbison's sacred motet, premiered on Jan. 14, 2004, at the Vatican as a prologue to a concert whose theme was reconciliation among Jews, Christians and Muslims.

The piece is based on the biblical book of Genesis, which characterizes Abraham as "father of many nations" and inspired Harbison with its potential as a "bridge, a mode of communication, a point of commonality" among the religions, he said.

Harbison submitted three modern poems and the verses from Genesis for papal approval and composed "Abraham" in a form similar to the centerpiece of the Reconciliation concert, Mahler's Symphony No. 2, with a chorus and a large brass section.

One of America's most distinguished artistic figures, Harbison has received numerous awards and distinctions, including a MacArthur "genius" grant and a Pulitzer Prize. Harbison has composed music for America's premiere musical institutions, including most recently the Boston Symphony and the Metropolitan Opera. He has also served as composer-in-residence for the Pittsburgh Symphony Orchestra and the Los Angeles Philharmonic.

The Wind Ensemble concert will also feature a premier of work by a former student of Harbison's, Lior Navok.

"Gleams From the Bosom of Darkness," Navok's composition for chorus and wind ensemble, is based on the poetry of Henry Wadsworth Longfellow. Navok, a native of Israel, described "Gleam" as a "journey through darkness while surrounded by ever changing sources of light as in the passage from dark times to better times in life."

Navok has won numerous awards, including the Lily Boulanger Award and the "Prime Minister Award" (Israel). He was the chosen artist of the Israel Cultural Excellence Foundation (IcExcellence) for the year 2003-2004, and has had recent commissions from the Fromm Music Foundation, the American Composers Forum, Collage New Music and a consortium of 20 U.S. wind ensembles.

"Gleam" was commissioned for the MIT Wind Ensemble by the Frank L Battisti 70th Birthday Commission Project, a consortium of 20 universities across the United States and Canada established by Harris in 2001 to honor Battisti, conductor emeritus of the New England Conservatory Wind Ensemble.

"The best way to honor Battisti's advocacy for the creation of new works for wind ensembles was to commission composers who were connected to him to create new works," said Harris, who had been a student of Battisti. According to Harris, three of the four pieces created through this project have already been performed multiple times across the country and have been published. The Wind Ensemble's world premiere of "Gleams" is the final work in the series to be presented.

Also on the program will be Milhaud's "Suite Française," Grainger's "Molly on the Shore" and Gordon Jacob's Trombone Octet.

The MIT Wind Ensemble concert will be held April 29 at 8 p.m. in Kresge Auditorium.

Admission is $5 at the door. For more information, call 617-253-9800.

Aardvark trumpets Jazz Month

Jazz up your weekend with a little "Trumpet Madness."

The Aardvark Jazz Orchestra (AJO) under the direction of MIT Lecturer Mark Harvey will be performing its spring concert on Saturday, April 30, featuring music from its latest CD, "Trumpet Madness."

The concert will celebrate national Jazz Appreciation Month and will feature a brief salute to Duke Ellington, whose birthday is observed every April 29.

The free concert, which begins at 8 p.m. in Kresge Auditorium, will also feature recent extended works for jazz orchestra by Harvey.

Joining the band for the Ellington salute will be vocalist Grace Hughes, who made her Aardvark debut at the orchestra's holiday concert. The AJO will reprise Harvey's composition "No Walls," a work inspired by and dedicated to Doctors Without Borders, which also debuted at that concert. Finally, the band will present the Boston-area premiere of "Modern Invention," commissioned by the Organization of American Kodaly Educators with partial funding from Meet the Composer and the New England Foundation for the Arts.

Renowned improvisational vocalist Jay Clayton will perform "Modern Invention," a work inspired by the 18th century Boston composer William Billings. Clayton has worked with Steve Reich, Bobby McFerrin, Gary Bartz and many other leading artists.

PHOTO / **V. J. ZABEK**

The Aardvark Jazz Orchestra, shown performing with MIT Lecturer Mark Harvey on trumpet, will perform a free concert Saturday, April 30, at Kresge Auditorium.

Aardvark's eighth CD recording, "Trumpet Madness," features several trumpeters, as well as the entire Aardvark Orchestra in both solo and collective improvisational roles. Among the trumpeters are Harvey, soloing on Taylor Ho Bynum's "Concerto for Orchestra and Improviser"; Berlin-based MIT alumnus Rajesh Mehta (S.B. 1986) on Harvey's "Spirals," which was written especially for Mehta and his percussion collaborator Paul Lovens; and Ho Bynum, Mehta, Greg Kelley and Jeanne Snodgrass, who join Harvey on the title tune "Trumpet Madness," an improvisational tour de force.

K.C. Dunbar, Jimmy Leach and Eric Dahlman can be heard on several other tracks, rounding out what Harvey calls a "trumpetistic panorama." All selections were recorded in live performance, five of them at MIT. Six of the seven cuts are world premieres.

Cyberarts in spotlight at MIT Museum

Jean Chemnick
Office of the Arts

Poised at the intersection of art and technology, "The Body +," a retrospective video compilation of performance pieces that use technology as an artistic tool, will be on view through May 1 at the MIT Museum

The title is intended to indicate the collaboration between the dancer and technology in a performance, as in "body + light," or "body + camera + sound + computer." The exhibit is an offshoot of the Ideas in Motion Conference, which in turn is part of the 2005 Boston Cyberarts Festival, a biannual festival of art and technology.

According to curator Nell Breyer of MIT's Center for Advanced Visual Studies, the nine choreographers whose work is included in this video compilation employ technologies ranging from simple video cameras to high-tech medical imaging and motion capture.

The oldest piece was choreographed by Trisha Brown in 1966 and features a projector mounted on the back of a performer, with the film projected around the performance space. The newest was produced by dance group Troika Ranch this year using sensors on dancers' bodies to trigger interactive 3-D imagery. In between is the work of such innovators as Marc Downie, a graduate student in MIT's Media Laboratory and the performance artist Sterlarc, whose work "Stomach Sculpture" uses medical imagery to show the inside of that organ, eliciting squeals of "ewww" from at least one 7-year-old viewer.

Combining dance and technology is not new, said Breyer, who is also a coordinator for the conference. But the increased availability of technology means that virtually all major choreographers are now making media part of their work. Technology, she said, needs to be used with a "strong degree of integrity," truly as a part of the performance, and not just for show.

PHOTO / **VITA BEREZINA-BLAKCBURN, ANGIE HOUSER**

This image, generated in Maya 5.0-6.0, is part of 'The Body +' exhibit at the MIT Museum through May 1.

This view was discussed at the conference, where participants quizzed each other on whether the inclusion of technology was really necessary and "organic" in their pieces.

The exhibition also marks a greater effort by the MIT Museum to "collaborate with groups around the MIT campus and show their work," said Stephanie Hunt, Learning Technologies Coordinator at the MIT Museum.

ARTS NEWS

Comic relief

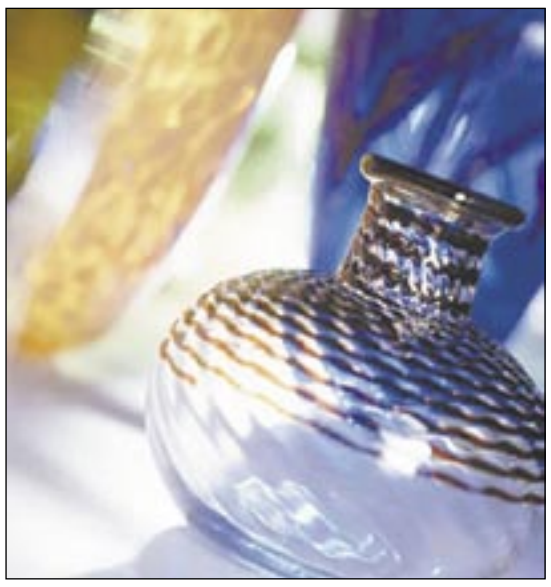
Indie comic book artists Paul Pope, Nick Bertozzi, Dean Haspiel and Jessica Abel will discuss life and art in the gritty New York comics community in a colloquium hosted by Comparative Media Studies. Pope has been called the "Comics Destroyer." Bertozzi writes his own series, "Rubber Necker" (insert). Haspiel is currently developing "As Big as Earth," a two-man superhero anthology. Abel created "Artbabe." They will bring samples. Professor Henry Jenkins will moderate. Thursday, April 28, 5 to 7 p.m. Room 2-105. Free and open to the public.

Curtain call

The Longy Early Opera Project's performance of Henry Purcell's "Dido and Aeneas," will use MIT talent: Ken Pierce, administrative assistant with the Harvard-MIT Division of Health Sciences and Technology, is the stage director and choreographer and music Professor Ellen Harris will deliver a preconcert lecture at 7 p.m., on Friday, April 29. The production features period costumes and dance. Performances April 29-30 are at 8 p.m. at the Longy School (27 Garden St., Cambridge). For more information, call 617-876-0956.

MIT EVENT HIGHLIGHTS APRIL 27–MAY 1

Science/ Technology · Performance · Architecture/ Planning · Humanities
Music · Exhibit · Reading · Special Interest
Business/ Money · Film · Sports · Featured Event



Glass Lab sale

The Glass Lab will hold its Mother's Day sale from 10 a.m.–5 p.m. in Lobby 10 on May 2.

WEDNESDAY April 27

Securities Studies talk Scott Henderson speaks on "Space as a Global Utility—Operational Capabilities and Limitations of the Global Positioning System." Noon. Room E38, 6th floor conference room. 253-7529.

Student Recital Bogdan Fedeles (G) plays Beethoven, Brahms and Debussy on the piano. 5 p.m. Killian Hall. 253-9800.

"MIT Responses to the BU Biolab" Talk by Dr. Jonathan King and Sanford Weiner. 5 p.m. Room 4-270.

MIT Chamber Orchestra Dante Anzolini, music director. 8 p.m. Killian Hall. 253-9800.

THURSDAY April 28

Spring Craft Fair Tech Community Crafters' sale. 9 a.m.–5 p.m. Lobby 10.

Earth Day Festival Plant give-aways, bike repair workshop, used clothing exchange, vegetarian food and more. 10 a.m.–5 p.m. Kresge Oval. 225-7661.

Earth Day @ MIT Dancing, music, raffles and more. 10 a.m.–3:30 p.m. Stata Center Amphitheater.

Robert S. Harris Lecture Talk by David Hunter on the search for gene-environment interactions in human diseases. 4:10 p.m. Room W20-306.

"Women in Struggle" Documentary on Palestinian women. 7:30 p.m. Room 4-370.

FRIDAY April 29

Green Campus Tour Tour of MIT's environmental initiatives. Noon. Student Center steps.

HTC Forum: "Phantasmagoria: History of an Optical Illusion" Talk by Tom Gunning, University of Chicago. 6:30 p.m. Room 32-124. 258-8438.

Lecture by Debra Singer Debra Singer, of "The Kitchen," discusses her vision for the organization. 6:30 p.m. Bartos Theater. 253-4400.

"Yeomen of the Guard" MIT Gilbert & Sullivan Players production. $12; $10 MIT community. April 2–May 1 and May 5–8. 8 p.m. Sala de Puerto Rico. 253-0190.

MIT Wind Ensemble World premieres: "Penny Ballad of Elvious Ricks," "Gleams From the Bosom of Darkness." $5. Kresge Aud. 8 p.m. 253-9800.

SATURDAY April 30

Women Scientists on Gender, Race and Nationality A one-day conference at MIT held in conjunction with the 20th anniversary of the Women's Studies Program. 8:30 a.m.–6 p.m. Location given upon registration, which is free. 253-8844.

NEWMAC Men's Tennis Championship Tournament Semifinal matches at 11 a.m. Championship match at 3 p.m. Du Pont Tennis Courts/JB Carr Tennis Bubble. 258-5265.

Steer Roast 42nd annual steer roast. 2 p.m. Senior House Courtyard. 253-3191.

Palestine Under Occupation Panel discussion of the Israeli-Palestinian conflict. 5 p.m. Room 10-250.

SUNDAY May 1

"The Body +" Works by artists and engineers who have designed new technologies to see, record and transform live movement. MIT Museum. Noon–5 p.m. 253-4444.

Organic Iron Chef competition Second annual cooking contest using organic, all-natural, vegetarian ingredients. Sign up by April 29. 10 a.m.–1:30 p.m. Next House Dining. 225-7661.

Stephen Salters, Baritone CONCERT CANCELED.

MIT Short Film Festival: European Short Films 1995-2002 Films by young directors from German Film Academies. 7 p.m. Room 4-237. 253-4312.

Go Online! For complete events listings, see the MIT Events Calendar at: http://events.mit.edu.
Go Online! Office of the Arts website at: http://web.mit.edu/arts/office.

EDITOR'S CHOICE

EARTH DAY FESTIVALS — *Apr. 28*
Events across campus celebrate the earth throughout the day. See April 28.
Kresge Oval and Stata Center Amphitheater

VIETNAM REMEMBERED — *Apr. 30*
Professor Noam Chomsky and other activists discuss the 1975 end of the Vietnam War.
Kresge Auditorium
11 a.m.–1 p.m.

'WHITE NOISE/ WHITE LIGHT' — *May 2*
Interactive sound and light installation opens a week of inaugural festivities.
Kresge Oval
7 p.m.

MIT EVENT HIGHLIGHTS MAY 2–8

MONDAY May 2

Glass Lab Mother's Day Sale 10 a.m.–5 p.m. Lobby 10.

"Constructing 'A New Middle East'" Final session in series on "Reconstructing Iraq." 5:30–7 p.m. Room 3-270. 324-0138.

CAVS Artist's Presentation: Tom Johnson Monologue accompanied by drawings and a sculptural maquette. 6:30 p.m. Room N52-390. 452-2484.

TUESDAY May 3

Inaugural Working Group Reception Luncheon hosted by the Working Group on Support Staff Issues in honor of inauguration. Noon–2 p.m. Walker Memorial.

Making Uncommon Connections Panel discussion on interdisciplinary research at MIT. 4 p.m.–6 p.m. Kirsch Auditorium. 253-4795.

"The Minimal Unconscious" Discussion of problems in the production methods of minimalist art during the 1960s and 1970s. 6 p.m. Room 25-111. 253-4400.

May Day Klezmer Style Contra Dance Dance to live music from ContraKlez. Sit-in musicians welcome. $5. 8 p.m. Morss Hall. 354-0864.

WEDNESDAY May 4

Inaugural K-12 Midway Meet colleagues who manage K-12 outreach programs on campus and learn about their activities. 11 a.m.–2 p.m. Walker Memorial.

"An Assessment of Iraq Two Years After the End of Major Combat" Talk by Professor Roger Petersen. Noon. Room E38, 6th floor conference room. 253-8092.

Artist Behind the Desk Classical flutist Bonnie Cochran, office assistant, MIT Card Office. Noon. Killian Hall. 253-9821.

Inaugural Art and Technology Symposium Inaugural symposium moderated by Alan Brody. Part of a weeklong celebration of the inauguration. 4–6 p.m. Kirsch Auditorium. 253-4796.

THURSDAY May 5

Inaugural Learning by Design 2.007 A retrospective look at how the contest and the machines have evolved. 1–3 p.m. Room 10-250.

"Zheng He's Seven Voyages" Professor Jin Wu of National Cheng Kung University, former Chinese minister of education, discusses Zheng He's 15th century voyages of discovery. 6:30 p.m. MIT Museum. 253-5297.

HTC Forum Talk by Gwendolyn Dubois Shaw, Harvard University. Sponsored by History, Theory and Criticism of Architecture and Art, Department of Architecture. 6:30 p.m. Room 32-144. 258-8438.

Inaugural Concert MIT Symphony Orchestra plays Mahler's Symphony No. 6. 8 p.m. Kresge Auditorium. 253-9800.

FRIDAY May 6

Symposium: Islamic Cities in the Classical Age Special event of the Aga Khan Program for Islamic Architecture at MIT. May 6 from 2–5:30 p.m. May 7 from 10 a.m.–12:30 p.m. and 2–6 p.m. Room 6-120. 253-1400.

Inauguration Ceremony Inaugural ceremony featuring Gamelan Galak Tika and Rambax, MIT's Senegalese drumming ensemble. 2 p.m. Killian Court.

Inaugural Community Reception Reception for Susan Hockfield. 3:30 p.m. Killian Court.

MIT Symphony Dante Anzolini, music director. Mahler's Symphony No. 6. $5. 8 p.m. Kresge Auditorium. 253-9800.

SATURDAY May 7

"COLLISION-box" New mergings of art and technology with a duo of interactive video-based displays. MIT Museum. Noon–5 p.m. 253-4444.

Walking Tour of Stata Center A "point and talk" tour of the Stata Center by representatives of the companies that built it. 1 p.m. Stata information desk. 253-5297.

Inaugural UnCommon Block Party Food and music to celebrate MIT. 3–7 p.m. Killian Court.

Inaugural MIT Concert Choir William Cutter, music director. $5. 8 p.m. Kresge Auditorium. 253-9800.

Memorial Reading for Robert Creeley Celebration of the life of Robert Creeley (1926-2005). 4 p.m. Room 10-250.

SUNDAY May 8

MIT Women's Chorale Spring Concert Program includes Vivaldi's "Gloria," Moravian duets by Dvorak and American songs. 3 p.m. McCormick Hall. 484-8187.

MIT Chamber Music Society Student Concert Mendelssohn's Piano Quartet. 5 p.m. Killian Hall. 253-9800.

MIT Chamber Music Society Student Concert Moszkowski's Suite. 7 p.m. Killian Hall. 253-9800.