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TechTalk
SERVING THE MIT COMMUNITY

MIT is No. 1 in U.S. News ranking

Sarah H. Wright
News Office

MIT has once again earned top honors in U.S. News & World Report's annual ranking of American graduate school programs, with the School of Engineering, the Department of Economics and more than a dozen MIT departments or programs ranked No. 1 nationwide.

U.S. News & World Report magazine has published its well-regarded graduate school rankings for 17 years. The 2006 edition of its book, "America's Best Graduate Schools," hit the newsstands April 1.

MIT's School of Engineering was ranked No. 1 among U.S. graduate engineering schools, with Stanford University, the University of California at Berkeley and Georgia Institute of Technology taking 2nd, 3rd and 4th place, respectively.

MIT also placed first in seven of 12 engineering specialties—aeronautics and astronautics, chemical, computer, electrical, materials, mechanical and nuclear engineering—fifth in civil engineering and seventh in biomedical engineering.

The magazine's criteria for determining overall engineering rankings include peer assessment, recruiter assessment, research activity, student selectivity and doctoral student-to-faculty ratio. MIT scored 100—the top—overall.

MIT's Economics Department was ranked No. 1 overall among doctoral programs in economics. The Institute's programs in econometrics, macroeconomics and public finance also took No. 1 rankings, with programs in development economics, industrial organization, international economics and labor economics all ranking among the top five.

MIT's Political Science Department was ranked 10th in the nation, along with Columbia University and UCLA. The Institute's Psychology Department ranked 12th, along with Stanford University and the University of Texas-Austin. The Institute's programs in behavioral neuroscience and cognitive psychology ranked fourth and sixth, respectively.

Department chairs and senior faculty ranked doctoral programs in social science and humanities based on academic excellence. MIT's Sloan School of Management tied for fourth place overall with Northwestern's Kellogg School of Management.

Business school deans and MBA program directors ranked business specialty programs on academic quality and placement success, among other categories. MIT's Sloan School's programs in information systems, production/operations and supply chain/logistics were ranked No. 1.

The magazine's ranking of American undergraduate programs appears in August.

Buddhist message written in sand

Denise Brehm
News Office

Painstakingly created grain by grain, the 4-foot Vajrasattva Sand Mandala was completed yesterday at Simmons Hall in a Buddhist ritual intended to form a physical expression of insight, awareness and altruism.

MIT's Buddhist chaplain, Tenzin (Tibetan for "Holder of Dharma") L.S. Priyadarshi, worked with Lama Dhondup Tsering, a Buddhist monk trained at the Gyuto Tantric College in India, to create the mandala, which they started on Saturday, April 2.

Buddhists use the visual and aural to try to condition the mind, to become aware of thoughts ("In any one moment, we have 3,000 thoughts in our mind," Priyadarshi said), to filter them down, and finally to manifest the good thoughts in speech or action.

The image at Simmons Hall focuses on the cosmic Buddha of insight and purification, according to Priyadarshi,

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PHOTO / **DONNA COVENEY**

Lama Dhondup Tsering, a Buddhist monk, works painstakingly Monday to create a sand mandala at Simmons Hall. It will be on view through Saturday.

Math whiz fights terror with smarts

Cathryn M. Delude
Special to MIT Tech Talk

The man who keeps the hit TV show "Numb3rs" mathematically honest is also using a rarified math theory to correct a flaw in standard counterterrorism thinking. A recent visiting professor of mathematics at MIT and a Hollywood math consultant, Dr. Jonathan D. Farley realized that experts could make potentially grave errors by overestimating their effectiveness at breaking up terrorist cells. "They're asking the wrong question and getting the wrong answer," Farley explains.

It's an easy mistake to make, since most government operatives don't use lattice theory to analyze social networks. Lattice theory, which includes Boolean algebra, is Farley's favorite conceptual realm, and his talent at it has earned him great acclaim. (In 2003, he solved a problem posed by MIT's Richard Stanley in 1981.)

He used to joke that it has no practical purpose whatsoever, but after the Sept. 11 terrorist attacks, Farley wondered if pure math actually could save lives. He remembered the opening line in the movie "A Beautiful Mind" about John Nash: "Mathematicians won the war." And, he remembered Palestinian leader George Habash's words: "Terrorism is a thinking man's game."

Being a thinking man, Farley says, "it's better to fight smarter, not harder," and fighting Al Qaeda with abstract theory could more accurately assess our vulnerability to future attacks than current methods. As a bonus, it could also prevent financial resources from being wasted on phantom fears at the expense of real dangers.

"People often view terrorist cells as a

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'Clocky' earns grad student 15 mins. of fame

Sasha Brown
News Office

A relatively simple product designed to combat a common problem is turning Media Arts and Science graduate student Gauri Nanda into a celebrity.

Working to solve the main cause of oversleeping—the snooze bar—Nanda has designed an early morning hide-and-seek process that could revolutionize the morning for many oversleepers.

Clocky—a shag-carpeting-covered digital clock on two wheels—jumps from the bedside table to find a hiding spot each time the snooze bar is pressed. A few minutes later, when the alarm sounds for a second time, the sleeper must first find the clock before he or she can press snooze again. Its designed to force people up and out of bed, making them less likely to keep snoozing.

Nanda created Clocky last semester

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Professor, HUD chief R. Wood dies

Sarah H. Wright
News Office

Robert C. Wood, a former professor of political science at MIT who went on to lead the U.S. Department of Housing and Urban Development, the Massachusetts Bay Transportation Authority, the University of Massachusetts and the Boston Public Schools, died Friday at his Boston home of stomach cancer. He was 81.

Robert Wood

"Professor Wood was an outstanding academic practitioner. He applied his research expertise to critical policy issues at the national and state levels and was a true builder of public higher education in the commonwealth of Massachusetts. He was much admired by his MIT colleagues in political science," said Philip Khoury, Kenan Sahin Dean of the School of Humanities, Arts, and Social Sciences and professor of history.

"Though Bob Wood's major focus was on urban affairs and the design of cities, he also had a significant interest in the development of policies for science and technology and how those subjects, so central to MIT, affected American life. He developed the first course at MIT in science, technology and public policy jointly with James R. Killian, the nation's first science advisor and previously president of MIT," said Eugene Skolnikoff, professor of political science, emeritus.

"He was an ideal leader, seeing the larger picture. I will be forever indebted to him and will miss his wise counsel and continued interest," Skolnikoff said.

Wood taught political science at MIT from 1959 to 1965. He served as undersecretary and later secretary of the Housing and Urban Development from 1965 to 1969 and was pivotally involved in implementing the Model Cities program (1966) and the Fair Housing Act (1968). He returned to MIT to teach and to direct the Joint Center for Urban Studies at MIT and Harvard. At the same time, he led the MBTA.

In 1970, he was named president of the University of Massachusetts, a post he held for seven years.

A native of Saint Louis, Mo., Wood achieved notoriety as a national figure who combined intellect, activism and political savvy in his numerous high-level roles, but his first passion, he declared, was cities.

"I'm essentially an urbanist," he told the Boston Globe in a 1994 interview.

His love for cities faced daunting expression during his tenure as superintendent of the Boston Public Schools from 1978 to 1980. The busing crisis had ended with court-ordered desegregation in 1974, but the system still reeled from turmoil when Wood took over.

"Although desegregation and forced busing are essential, they aren't the true issues," Wood said on taking the post. "The real issue is change in teaching, in employment and in the big-city system."

While Wood served as president of the University of Massachusetts he led its expansion to include UMass Medical Center in Worcester and its Boston campus. He also played a key role in bringing the John F. Kennedy Library and Museum to its present site at Columbia Point, next to UMass-Boston.

Wood was born on Sept. 16, 1923. He won a scholarship to Princeton University, interrupting his studies to serve in the Army. Wood saw action during the Battle of the Bulge, won a Bronze Star, and rose to the rank of sergeant.

After graduating from Princeton, Wood earned three degrees from Harvard: a master's in public administration and a master's and a doctorate in government.

Wood's best-known book is "Suburbia: Its People and Their Politics" (1958). His other books include "The Necessary Majority: Middle America and the Urban Crisis" (1972), and "Whatever Possessed the President? Academic Experts and Presidential Policy, 1960-88" (1993).

Wood leaves his wife, Margaret (Byers); a son, Frank of New York City; two daughters, Frances of Cambridge and Margaret Hassan of Exeter, N.H.; and two grandchildren.

A funeral will be held April 11 at 3 p.m. in St. Paul's Cathedral on Tremont Street in Boston.

Leaders tackle world woes at MIT

Nancy Stauffer
Laboratory for Energy and the Environment

PHOTO / **DONNA COVENEY**

MIT Professor John Heywood, director of the Sloan Automotive Laboratory, far right, makes a point at the Alliance for Global Sustainability gathering on March 21, while panel members Leena Srivastava of The Energy and Resources Institute, India, and Professor David Marks, of MIT's Laboratory for Energy and the Environment, look on.

The prosperous nations of the world must work with developing countries to find innovative ways of providing electricity—not from fossil fuels but from renewable resources, keynote speaker R.K. Pachauri told a recent meeting of the Alliance for Global Sustainability.

Almost 2 billion people worldwide have no electricity in their homes, said Pachauri, director general of The Energy and Resources Institute, India, and chairman of the Intergovernmental Panel on Climate Change.

Some 250 leaders from academia, industry, government and nongovernment organizations addressed the challenges of identifying and implementing sustainable-development strategies worldwide at the meeting of the alliance held at MIT March 20-23. The AGS, currently celebrating its 10th anniversary, is a collaborative research program whose member institutions are MIT, the Swiss Federal Institute of Technology–Zürich, the University of Tokyo and Chalmers University of Technology in Sweden.

The AGS launched a new initiative on sustainable energy at the meeting, "Near-Term Pathways to a Sustainable Energy Future." Its goal is to identify steps that can be taken now to move the world toward sustainable energy technologies, infrastructures and markets in the future.

AGS research to that end will focus on specific sectors, notably transportation and electric power, but will also have a regional focus. Presentations at the meeting demonstrated that energy-related needs and opportunities vary widely from place to place, and approaches must be designed to suit the local context. India, for example, aims to reach "developed country" status by 2020, while Africa must struggle with poverty, land degradation and an HIV/AIDS pandemic along its path to sustainability.

Developed nations must actively partner with the developing world because "the conditions for a repeat of the economic history of the north are just not available to the societies of the south," Pachauri said.

He described the interrelated problems of food security, sustainable energy, and climate change and posed the following challenge to the AGS: "As an alliance of developed country institutions, [the AGS] has an enormous opportunity and responsibility to inform the public and decision makers in the developed world both on the serious nature of problems…in the developing world and their likely solutions."

The AGS meeting also served as a platform for a major policy announcement by Lars G. Josefsson, president and CEO of Vattenfall AB, a large European energy conglomerate. To "get things going," he called for setting the "correct" price on emissions—a price that should be global and established by market forces.

Asked for his views on the impact of the AGS, Professor Charles M. Vest, MIT president emeritus and one of the founding presidents of the alliance, said that the international collaboration made possible by the AGS has been a "life-changing" experience for many of MIT's faculty and students. Since it was established 10 years ago, the AGS has "transformed" MIT, driving the formation of environmental programs and inspiring a large community of students.

Nonprofit leaders speak at Sloan

Michael Brown, president and co-founder of City Year, a national youth service corps, was on campus recently to share his insight on nonprofit leadership with students at MIT's Sloan School of Management.

"Never compromise on your fundamental vision, but be ready to compromise on everything else," said Brown, president and co-founder of the national youth service corps. Brown said he was offered government funds to start City Year if it limited corps members to at-risk youths. "We turned it down," Brown said. "That wasn't our vision. We wanted young people from all backgrounds."

Today, City Year is a robust private-public partnership with more than 1,000 corps members working in multiple community service programs.

Brown was just one of several CEOs who participated in the workshop on "Leadership in the Nonprofit Sector," one of a dozen leadership workshops offered during the Sloan Innovation Period (SIP) in March. SIP is a one-week period at the semester midpoint when regular classes are suspended, and MIT Sloan students enroll in seminars taught by faculty and industry leaders. The nonprofit session was led by Jeff Shames, former CEO of Massachusetts Financial Services.

Among the speakers was Bill Shore, founder of Share Our Strength—best known for its "Taste of the Nation" fund-raiser (10,000 chefs and restaurants hold banquets in 70 cities to raise money for anti-hunger programs). "Everybody tries to squeeze a nonprofit's margin," he said. "We need to be an efficient service provider, but also get the word out that a nonprofit's total return on investment is how you improve quality of life for people in need."

Other nonprofits adopt business-like strategies to measure success. At the 112-year-old Boys & Girls Club of Boston, CEO Linda Whitlock outlined how the agency changed from a loose affiliation of sites and programs to an integrated network. The result: 12,000 young people are club members, up from 5,000 seven years ago.

"SIP is designed to allow students to learn about leadership by seeing a broad range of role models, building skills and reflecting on their own leadership styles," said Deborah Ancona, the Seley Distinguished Professor of Management and faculty director of the new MIT Leadership Center. "In this session, we looked at several models of leadership in nonprofit organizations. These speakers are exemplars of great leadership. They show how profit and justice can come together."

SIP sessions are part of a cluster of leadership programs developed and offered by the MIT Leadership Center. The center develops cutting-edge theory, tools and action-oriented curricula to develop leaders at all levels of all types of organizations from tiny nonprofits to huge multinationals.

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Vest, WMD commission issue final report

Sarah H. Wright
News Office

Former MIT President Charles M. Vest and his eight fellow members of the bipartisan Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction issued their final report to the president last week.

The commission concluded that U.S. intelligence agencies were "dead wrong" and their tradecraft was "worthless or misleading" in reporting the presence in Iraq of nuclear, chemical or biological weapons of mass destruction.

More worrisome, the decentralized U.S. intelligence community still knows "disturbingly little" about the ability of terrorists or private networks to acquire or develop weapons of mass destruction, the report said.

Vest was named to the commission in early 2004, at which time he said, "This assignment is a call to major national service." Last week, Vest characterized the 618-page report as more than an inventory of intelligence failures, despite its searing criticism of the CIA in particular. The commission's work was intended to discern why "some intelligence efforts were successful and others terribly flawed, and then apply those lessons to improve intelligence going forward," he told The Tech.

In addition to Vest, the commission included co-chairs Laurence Silberman, a Republican federal appeals court judge, and Charles Robb, a Democratic former senator, as well as Yale President Richard C. Levin and Sen. John McCain (R-Arizona).

The commission focused intently on Iraq and its biological and chemical weapons programs, used to justify the U.S. invasion of Iraq in March 2003. It concluded that Bush officials had been misled by flawed intelligence about Iraq and found no evidence that the administration had manipulated data or pressured anyone to do so.

The group also studied American intelligence in Libya, Iran, North Korea and Russia to assess its strengths and vulnerabilities generally.

While "disheartened" by its findings, the commission offered more than 50 specific recommendations for transforming the 15-agency intelligence community into a centralized, innovative and technologically agile resource for national defense.

Charles Vest

President Bush appointed the commission a year ago. It is expected to be the last of a series of major investigations into prewar intelligence in Afghanistan and Iraq.

The commission's "prominent and recurring theme" was its call for "stronger and more centralized management of the intelligence community," echoing recommendations by previous studies.

As a result of the Intelligence Reform and Terrorist Prevention Act passed by Congress in late 2004, Bush appointed former Ambassador John Negroponte as the new director of national intelligence in February.

The commission's report, a stylistically accessible document, takes a rueful tone on his appointment. Negroponte will have "broad responsibilities but only ambiguous authorities" over intelligence, the commission said.

The "headstrong" Pentagon and CIA and an insular intelligence culture will require more than regime change at the top, it says.

"Reform must rise from the bottom too, and it must involve true cultural change within the Community … At every level, new and better ways of doing business should be encouraged, nurtured, and protected," it says.

PHOTO / **DONNA COVENEY**

Spring at last

Electrical engineering and computer science grad student Will DelHagen takes a snooze in the grass on Killian Court last Thursday, March 31, basking in the warmth of the sunshine.

Swager, Yablo to head departments

Sarah H. Wright
News Office

Timothy Swager, professor of chemistry, and Steve Yablo, professor of linguistics, have been appointed heads of their respective departments, effective July 1, 2005.

In announcing Swager's appointment, Robert Silbey, dean of the School of Science, said, "Tim will make an outstanding head of chemistry and I look forward to working with him over the next five years."

Swager also serves as associate director of the Institute for Soldier Nanotechnologies (ISN) and as leader of the ISN team on Mechanically Active Materials and Devices.

His research interests include chemical sensors, polymer science, liquid crystals, synthetic conductors, molecular electronics and photonics. He is perhaps best known for his demonstration of the amplifying ability of molecular wires to create ultrasensitive sensors for explosives that rival the sensitivity of bomb-sniffing dogs. Sensors enabled by Swager's technology are presently being used in Iraq by the U.S. Marine Corps to detect explosives threats.

Swager received a B.S. degree from Montana State University in 1983 and a Ph.D. from the California Institute of Technology in 1988. He did postdoctoral work at MIT and was on the faculty of the University of Pennsylvania before coming to MIT as a professor of chemistry in 1996.

Timothy Swager

Steve Yablo

In his announcement, Silbey recognized the "leadership and dedication to the department" of outgoing head Stephen J. Lippard, Arthur Amos Noyes Professor of Chemistry.

Philip Khoury, Kenan Sahin dean of the School of Humanities, Arts, and Social Sciences, announced Yablo's appointment.

"Steve Yablo is one of the leading philosophers of his generation, having made significant contributions to logic, philosophy of mind and metaphysics. He's also an outstanding undergraduate teacher. His leadership of the Philosophy Section has contributed to the very high national ranking of our philosophy Ph.D. program. I have every expectation that his leadership of the Linguistics and Philosophy Department will only redound to that department's benefit in the years ahead," Khoury said.

Yablo describes his areas of specialization as metaphysics, philosophy of mind and philosophical logic. He teaches courses in metaphysics, logic, philosophy of mind and philosophy of mathematics. In the past five years, Yablo has published articles with such lively titles as "Tables Schmables" (2003), "Go Figure: A Path Through Fictionalism" (2002) and "Coulda, Woulda, Shoulda" (2001).

Yablo received a B.Sc. degree in math and philosophy from the University of Toronto in 1979 and a P.h.D. from the University of California, Berkeley, in 1986.

He taught at the University of Michigan and the University of Toronto before coming to MIT in 1998 as an associate professor of philosophy. He was promoted to full professor in 2001.

D. Fitzgerald named SHASS associate dean

Sarah H. Wright
News Office

Deborah K. Fitzgerald, Professor of the History of Technology in the Program in Science, Technology and Society, has been named the new associate dean of the School of Humanities, Arts, and Social Sciences, succeeding Charles Stewart III as of April 1, SHASS Dean Philip S. Khoury announced.

Fitzgerald's responsibilities will be focused on undergraduate education and programs in the school, including the HASS component of the General Institute Requirement, and new initiatives to strengthen the humanities, arts and social sciences at MIT. She will work closely with the undergraduate and graduate program officers within the school's academic departments, sections and programs. As a member of School Council, she will be directly involved in faculty personnel decisions and other issues of importance to the school.

"Deborah is a very fine historian of technology and one of the leading historians of American agriculture in the country today," Khoury said. "She is deeply interested in maintaining the high quality of our teaching programs and has had valuable experience in this area, both within her own department and as a member of MIT-wide committees related to educational issues. Deborah has a tremendous sense of duty to the Institute, and I am certain people within SHASS and across MIT will find it a pleasure to work with her."

Deborah Fitzgerald

Fitzgerald's predecessor, Charles Stewart III, professor of political science, concluded his appointment as associate dean when he was appointed head of the Department of Political Science last January. Khoury said, "I am sure that Deborah will continue the fine efforts that Charles contributed to the school during his tenure as associate dean, and I am fortunate to be able to continue to work with Charles as a member of School Council, now in his capacity as a department head."

Fitzgerald is active in the Society for the History of Technology and is currently serving as president of the Agricultural History Society. That organization honored her in 2003 with the Theodore Saloutos Prize for best book of the year for "Every Farm a Factory: The Industrial Ideal in American Agriculture." She is also the author of "The Business of Breeding: Hybrid Corn in Illinois, 1890-1940."

Fitzgerald received a B.A from Iowa State University in 1978 and a Ph.D. from the University of Pennsylvania in 1985. Since starting at MIT in 1988 as assistant professor in the Program in Science, Technology and Society, Fitzgerald has chaired the Ph.D. program in History, Anthropology, and Science, Technology and Society, which is administered by the Program in Science, Technology and Society jointly with the History Faculty and the Anthropology Program. She has chaired the gender equity committee in the School of Humanities, Arts, and Social Sciences, and she has been involved with a variety of Institute-wide committees, including the committees on Academic Performance, Discipline and Graduate School Policy.

Nobelist's DNA going, going gone on eBay

Elizabeth Thomson
News Office

MIT Nobel laureate Frank Wilczek and his wife, Betsy Devine, recently found themselves the subjects of an unusual eBay auction: Some enterprising students from a Swedish high school saved the glasses the two had sipped from while visiting the school and then offered them for sale.

The sale offered buyers the chance to own some DNA from a Nobel laureate. And, it served a worthy cause: Proceeds would go toward a field trip for the senior class.

According to the eBay text, the Wilczek glass "was used to consume water by the famous physicist on December 16, only six days after he received the Nobel Prize in Stockholm. It has since not been washed, and the water that was still in it has been left to evaporate, leaving the DNA still in the glass."

Devine and Wilczek approved the auction in advance.

On a side trip after the Nobel ceremony, Wilczek and Devine visited the Rymdgymnasiet, or Swedish Upper Secondary School of Space Technology. "We had wanted to see the famous 'space high school' while we were in Sweden, so we were delighted to be invited there," Devine said.

About 20 minutes before their scheduled talk, they were told of its unusual format: the two would be queried by 15 "aliens" in front of an audience of about 100 kids. Devine, in her web log, explains that "the aliens were planning to destroy all life on our planet, but their teacher had persuaded them to hold off if the visiting Nobel Prize winner and his spouse could give good answers to their many and diverse questions."

The scheme, devised by Rymdgymnasiet teacher Odd Minde, "was brilliant," said Devine. "The students were completely involved, not shy, and came away with much more information than they would have from a normal 'bigwig' presentation."

Among their questions: Does science prove that religion is wrong? Wilczek's answer, according to Devine: "when religion talks about our aspirations and our sense of morality, I do not believe that science can contradict it. However, when religion contradicts science on matters of fact, religion must yield."

In her weblog Devine reports that "fortunately, [the aliens] liked the answers we gave."

The eBay auction of the couples' drinking glasses attracted eight bidders; the final price was $39.69 plus $25 shipping.

Who won? Devine bought the glasses herself. She notes in her web log that she wanted "a souvenir of an unforgettable encounter with blue and green painted aliens at the Rymdgymnasiet."

Frank Wilczek is MIT's Herman Feshbach Professor of Physics. He shared the 2004 Nobel Prize in Physics with H. David Politzer and David Gross.

Devine's blog can be found at http://betsydevine.weblogger.com/.

Science becomes art in 'Weird Fields'

Elizabeth Thomson
News Office

The whorls and swirls of color may look like something by art nouveau painter Gustav Klimt, but the winning images from MIT's annual 8.02 "Weird Fields" contest are really computer-generated visualizations of vector fields.

To help students understand electromagnetic force fields, Professor of Physics John Belcher and colleagues at the MIT Center for Educational Computer Initiatives developed a computer applet into which students put the mathematical expressions that describe a given field. "It then pops out a visual representation of what the field looks like," he said.

And the most striking image wins.

MIT's undergraduate course "Introduction to Electricity and Magnetism," better known as 8.02, is part of the Institute's Technology-Enabled Active Learning Project (TEAL), which recasts physics learning by presenting familiar material in dramatically different ways. TEAL merges lectures and hands-on desktop experiments with cutting-edge visualizations and simulations.

Belcher, who teaches 8.02, said he uses the "Weird Fields" contest to encourage students "to construct fields themselves and get some feeling for why they look like they do."

Students from around the world can learn from this approach, since the course materials—and the computer program involved in the contest—are available free through MIT's OpenCourseWare initiative (http://ocw.mit.edu).

This year's winner is George S. Zaidan.

PHOTO / **DONNA COVENEY**

Winner of the 'Weird Fields' competition George Zaidan stands beside his winning print, which is hanging in the MIT Museum.

First runner-up is Dan Yuan; second runner-up is Brian Malley. All three are freshmen.

Large reproductions of the winning image from this year and those from the 2004 contest are currently on display at the MIT Museum as part of a larger exhibit on the TEAL program.

For more information about the course and the contest, go to http://web.mit.edu/8.02T/www.

Alumnus wins national medal of science

Allyson Every
MIT Alumni Association

MIT alumnus R. Duncan Luce, a pioneer in the field of mathematical behavioral sciences, received a National Medal of Science, the country's highest scientific honor, from President George W. Bush in a White House ceremony on March 14.

Luce, 79, who began his career at MIT, is the Distinguished Research Professor of Cognitive Sciences and Economics at the University of California Irvine.

R. Duncan Luce

Luce's work uses math modeling to explain thinking, reasoning and a broad spectrum of human behaviors. Individual and group decision-making involving risk or uncertainty are a particular focus. His work in game and choice theory and fundamental measurement and applications in psychology helped shape the fields of psychology, the social sciences and contemporary economics.

"Duncan Luce is one of the giants of the social and behavioral sciences—an exemplary scholar, educator and human being," said Barbara Dosher, dean of the U.C. Irvine School of Social Sciences.

"I'm very grateful for this great honor," Duncan Luce said. "I'm thankful for the support—familial, academic and federal—that made it possible. I'm also grateful for my genes, which have enabled me to live a long life and enjoy this honor."

Raised in Pennsylvania, Luce entered MIT in 1942 studying aeronautical engineering. He enlisted in the Navy's V12 program on campus and graduated in 1945. Returning to MIT on the GI Bill, he decided to switch to applied mathematics.

"It was at MIT where I became fascinated by possible links between math and psychology," he said. "Various nontraditional topics were in the wind in postwar Cambridge—Shannon's information theory, von Neumann and Morgenstern's game theory and Weiner's cybernetics. I learned a bit of each and after meeting Leon Festinger and Alex Bavelas became interested in what is now called social networks."

In 1950, he completed his mathematics thesis on semigroups. Then, he shifted his focus to become a behavioral scientist with an intense mathematical focus, a career gamble. Luce said it was an uneasy nine years before he was accepted by the behavioral science community.

His first official academic position was at MIT with Bavelas' small groups laboratory (1950-53), where he was "first exposed to the actual interplay of data and mathematical theory," he said. "I received a fine informal education in the weekly seminars on information theory and learned from a number of MIT scientists who ultimately became well known: Noam Chomsky, William McGill, George Miller, J.C.R. Licklider and Walter Rosenblith."

His university appointments have included Columbia, the University of Pennsylvania, Harvard and U.C. Irvine. In 1988, Irvine recruited him from Harvard to be the founding director of its new Institute of Mathematical Behavioral Sciences, which he headed for 10 years.

Duncan Luce has one other notable MIT connection. "My wife, Carolyn A. Scheer, was a member of MIT's staff from 1970-1981," he said, "primarily in the personnel office at the time we first met in 1976."

Luce has written or co-authored nine volumes—including "Individual Choice Behavior," the three-volume "Foundations of Measurement" (co-authored with D.H. Krantz, P. Suppes and A. Tversky) and "Response Times." He has also written more than 200 scientific journal articles and edited 13 books. Today, Luce is researching utility theory and psychophysics.

Looking back on a remarkable career, Luce, a scholar of risk, observed: "I guess that 1950 gamble back at MIT paid off."

CLOCKY

Continued from Page 1

in an industrial design class, but news of her invention started to spread just recently. After a blogger linked to Nanda's site, Clocky—and its creator—suddenly became media darlings. Clocky is scheduled to make an appearance on "Good Morning America" next week and has been profiled in dozens of newspapers across the country.

"People from all over the place are offering to beta-test it," said Nanda, who is currently working on patenting Clocky.

"Clocky is representing a story people understand," said Principal Research Scientist Michael Bove of the Media Lab. Bove is Nanda's advisor and the director of the CELab, the Media Lab's consumer electronics research program, whose goal is to create "simple, ubiquitous, easy- and delightful-to-use devices."

Bove has been overwhelmed by the amount of attention bestowed on Clocky so quickly. "I can't recall another project that went from zero to infinity, in terms of attention, so quickly," he said.

The idea for Clocky came to Nanda a couple of years ago. Her cat had had seven kittens, and she was charmed by the way they would nibble her toes each morning to wake her. Clocky works by the same principle. "I wanted Clocky to be like a troublesome pet that you love anyway," said Nanda, a Michigan native who has received thousands of e-mails from around the country requesting a Clocky to take home. The general consensus seems to be that people have trouble waking up in the morning and that traditional alarm clocks are not making the experience any more pleasant. Clocky changes that by making waking up a game. "They ask when it is going to be available at Target," she said, laughing.

Clocky's spongy body is made to survive a fall each morning. After the snooze button is hit, Clocky rolls away and hides. Each time the snooze button is pressed, Clocky finds a new hiding space. "I wanted to make something with some personality," said Nanda, who has been shocked by all the attention. "I guess it really hit a nerve with people."

There is still room for improvement in terms of Clocky's design, said Bove. "It could be a lot more intelligent," he said.

Right now, Nanda is working to make Clocky "a little more rugged" before its "Good Morning America" appearance. At press time, the exact air date of the show was unknown.

PHOTO / **MIT MEDIA LAB**

Clocky is designed to roll off the table and hide when its snooze bar is pressed.

Researchers ID gene linked to brain size

A tiny molecule is key to determining the size and shape of the developing brain, researchers from the Picower Institute for Learning and Memory at MIT reported in the March issue of Nature Neuroscience. This molecule may one day enable scientists to manipulate stem cells in the adult brain.

A candidate plasticity gene and its growth-promoting protein, CPG15, could potentially be used to develop therapies for renewing damaged or diseased tissue. While stem cells regenerate neurons in only a few regions of the adult brain, researchers have speculated that a lack of adult stem cells may cause memory deficits and other disorders.

Elly Nedivi, Fred and Carol Middleton assistant professor in brain and cognitive sciences at MIT, found that cpg15—one of many novel plasticity-related genes she has uncovered—is key to the survival of neural stem cells in early development.

Nedivi, postdoctoral associate Ulrich Putz and brain and cognitive sciences graduate student Corey C. Harwell identified a form of CPG15 that protects cortical neurons from apoptosis, or programmed cell death. Apoptosis is a normal and essential part of early development, when brain cells proliferate rapidly and some are killed off, but little is known about how apoptosis of growing neurons is regulated.

"CPG15 is one of the few molecules shown to be essential for survival of specific stem cell populations in the developing brain," Nedivi said. "By controlling apoptosis, CPG15 allows the progenitor pool (of cells) to expand, and even modest changes in the size of the progenitor pool during its exponential growth phase can drastically affect the final size and shape of the cortex."

Over-expressing CPG15 in rats gives them bigger brains. In addition, their enlarged brains have grooves and furrows like evolved mammalian brains with larger surface areas.

"We propose that by countering early apoptosis in specific progenitor populations, CPG15 has a role in regulating size and shape of the mammalian forebrain," the authors wrote.

This knowledge may one day be used to enhance survival of normally occurring stem cells in the human brain, or to grow neurons outside the body and then deposit them where needed to replace damaged or diseased tissue.

This work was supported by the National Eye Institute and the Ellison Medical Foundation.

Youngsters get peek at labs

Sasha Brown
News Office

For dozens of AP and advanced biology high school students from Cambridge and beyond, MIT's spring break offered a chance to become graduate students for a day.

On Wednesday and Thursday, March 23 and 24, more than 160 students from six different area high schools, including Cambridge Rindge & Latin School (CRLS), came to Building 68 to tour labs, attend presentations and generally get a feel for the graduate student experience at the Institute. Students from Arlington, Peabody, Hudson, Lawrence and Newburyport also attended.

The program, now in its third year, invites students to take a closer look at biology and to learn what it takes to embark on graduate studies in the field. "We are trying to help make science exciting and real. We want some of them to learn that you can make a living doing this," said biology Professor Jonathan King, who takes part in the event every year.

The students spent the day in small class or lab activities. Each lab focused on one activity designed to spark interest and to be easily applicable to student's real lives. For example, one lab focused on microbiology and sporulation, which is relevant to anthrax and other infectious diseases.

Another lab showed the different stages of development of fruit flies and displayed flies with eye mutations as well as flies whose nervous systems glow green.

"I was surprised by how interested they were," said Jessica Whited, a Ph.D. candidate who helped lead a tour called "Neurobiology in Flies" in the Garrity Lab. "They were asking really good questions and explaining what they saw clearly."

Graduate student Ishara Mills, who worked with students on examining mutant zebrafish embryos agreed. "They actually sounded like scientists," she said.

"They were definitely excited to be here," said Shannon Flaugh, a fellow graduate student. Flaugh worked on explaining sickle cell anemia and the structure of hemoglobin by using protein modeling software and individual laptop computers.

"I was delighted to see how excited and interested my students were in the research going on at MIT. I think it is remarkable and wonderful that you all make this investment in our high school students," said Elizabeth Howell, a biology teacher at Arlington High School. "Every one of them mentioned how well treated they were and they noticed the passion and talent of the investigators they interacted with. It gives me a wealth of ideas to refer back to for the rest of the year."

All told, nine labs participated in the tour and more than 16 graduate students, 12 postdocs and five faculty members were involved. "According to some of the returning teachers, the field trip is one of the highlights of their school year," said biology Instructor Mandana Sassanfar, one of the organizers of the annual event, which is funded primarily through the Howard Hughes grant awarded to Professor Graham Walker of the Biology Department, one of the founders of the program.

"The students appeared to enjoy all of the activities today but it is always very important to excite them about research, show them how science is really done and to give them the opportunity to meet grad students, postdocs and researchers in action," said Sassanfar. "They will notice that scientists are very nice, quite young and normal people, with a passion for research and discovery."

PHOTO / **MANDANA SASSANFAR**

Eleventh-grader Nick Tetreault of Hudson High School examines a model of a mitotic spindle at MIT on March 23. Tetreault was one of dozens of high school biology students who visited the Institute during spring break to see what graduate work in the field is like.

MATH

Continued from Page 1

graph, with members as nodes connected to each other if they have a direct communications link," Farley says. "But they're leaving out the most important part, the hierarchy," he says. "Terrorist cells have chains of command (partially ordered sets) from leaders to midlevel operatives to the workers who carry out orders."

As simplified examples, the graph theory would conclude that blocking four intersections along Massachusetts Avenue between Kresge Auditorium and Harvard Square could prevent MIT students from driving to the square. But students could use side streets to bypass the blocked intersections.

Likewise, the graph theory would show that capturing four members of a 15-member terrorist cell arranged as a binary tree gives a 93 percent chance of disabling the whole cell. Even without knowing the captives' positions in the hierarchy, it's still possible to plug in the "cut sets" that could break the command chain into a probability formula, and that probability is, unhappily, only 33 percent. "Lattice theory won't tell you how to fight the terrorists, but it might tell you if you've won the battle," Farley says.

Farley's hypothesis, published in late 2003, interests several military researchers, including Rebecca Goolsby of the Office of Naval Research. "With covert missions, there's a lot of missing data, and some of it is wrong," she says. "Jon came up with a new approach and drew up good questions" for approaching these "very muddy" issues in an analytical way.

An associate professor of applied mathematics at Vanderbilt University, Farley was a Dr. Martin Luther King Jr. Visiting Professor in the MIT Department of Mathematics from January 2003 to December 2004. He is also the co-founder of a mathematical modeling consulting firm. "Our ultimate goal is to develop software so that law enforcement experts without these rigorous mathematical skills can ask—and answer—these same analytical questions about security."

Sense scent's complexity

Sasha Brown
News Office

Of all the five senses, the sense of smell is taken the least seriously, Dr. Luca Turin of Flexitral Inc. told a standing-room-only crowd gathered in Room 180 in the Biology Building on Monday, April 4.

"There is a psychological resistance to taking smell seriously," said Turin, who hopes to change that with his lifelong study of scent.

Turin believes the problem is the common misconception that scents are subjective. In fact, he said, "There are a very small number of molecules that smell different to different people."

For scientists, scent has proven elusive because it has been close to impossible to predict a scent by looking at its molecules before synthesis. Traditionally, the shape of molecules has been thought to determine scent, but Turin's theory is that the vibration of molecules is the true cause of smells.

With a Ph.D. in biophysics and physiology from the University of London, Turin has been studying scent for years. Turin's life and research are the subject of a 2003 book by journalist Chandler Burr, "The Emperor of Scent: A Story of Perfume, Obsession and the Last Mystery of the Senses."

In the early 1990s, Turin learned of a device known as the spectroscope that could analyze molecules and their vibrations. He quickly became convinced that the human nose acts as a spectroscope of sorts for scent.

Thus far, his theories have proven to be controversial at best, he said. Turin has identified many molecules that are shaped similarly, but whose scents are different, disproving the more popular shape theory of scent. However, proving his vibration theory has been slightly more difficult, he said. Nevertheless, his research has been successful enough to launch his own scent company, Flexitral. He said Flexitral now has nine synthetic scents on the market.

Tissue engineering: It's a real growth field

Sasha Brown
News Office

Driven by a shortage of organs for transplant, tissue engineering has started to come into its own in the past few years, Gordana Vunjak-Novakovic, a principal research scientist in the Harvard-MIT Division of Health Sciences and Technology, told a group of nearly 100 gathered at the Museum of Science recently.

Although engineered organs remain a long way off, tissue engineering has already made it possible for doctors to use a patient's own cells to repair damaged cartilage, a feat long considered impossible, according to Vunjak-Novakovic, whose talk was part of the Frontiers in Health Science lecture series held every Friday night in the museum's Skyline Room. The March 18 lecture, "Tissue Engineering: The Challenges of Imitating Nature," featured Vunjak-Novakovic and her entire research team and was followed by a question and answer period.

Vunjak-Novakovic began the talk by pointing to the vast need for research. There are currently close to 90,000 people waiting for organ transplants in this country and not nearly enough organs to go around, she said.

The idea behind tissue regeneration and transplantation is not a new one, said Vunjak-Novakovic, who gave a brief history lesson during her 45-minute lecture. The chimera and sphinx of ancient times were mythical beasts composed of the parts of different animals. Even the science itself is not brand new. "Tissue culture and cell culture are about 100 years old," she said.

But the field continues to grow and expand, offering new technology where once there was no hope of recovery. In addition to the work on cartilage repair, an FDA-approved method known as Carticel, Vunjak-Novakovic said that researchers experimenting on a rabbit have been able to grow new tissue in a laboratory to fix a deficient knee joint. "If it worked really nicely in a rabbit, would it work in humans?" she asked.

Vunjak-Novakovic and her team have been focused on engineering a contractile patch to rebuild hearts. It is a complicated process, said Vunjak-Novakovic, one that is only beginning to be understood. "There is big, huge potential," she said. "But we still have a long way to go before this is a clinical reality."

For the tissue engineer, learning from nature is key, said Vunjak-Novakovic. "Nothing is uniform in nature," she said. "There is huge complexity." From watching nature, one tries to translate the process into technology. "The cell is the actual tissue engineer," she said.

Center for Real Estate celebrates its 20th year

Ellen Williams
Center for Real Estate

At MIT's Center for Real Estate, landmarks are the coin of the realm. So it was no surprise that the center's New Visions 20th Anniversary Weekend was, well, a landmark event. The center, established 20 years ago in the School of Architecture and Planning, is the focal point for real estate education and research at MIT.

"Real estate shapes our societies in powerful ways," said MIT President Susan Hockfield in her address welcoming attendees. She noted that, as an inherently interdisciplinary enterprise, real estate is a perfect MIT subject.

The weekend was launched on Friday, March 18, with a keynote address from Lawrence Bacow, former chancellor of MIT and current president of Tufts University, who is better known to the audience as one of the center's co-founders and a popular professor. He quoted Lenin on revolutions—"After they happen, they seem inevitable"—and noted that the center was a revolutionary proposition at the time it was founded.

The core of the weekend was a conference on "Vision Driven Cities." Conference moderator Dennis Frenchman, head of the City Design and Development Group, explained that vision-driven cities are large, technology-intensive urban development projects, wired for maximum connectivity and adaptability. Three speakers discussed highly visible projects: Canary Wharf, London; New Songdo City, South Korea; and University Park, Cambridge, Mass.

The tone for the presentations was set early by Camille Douglas of Columbia University, who opened her talk by saying, "To have true innovation, you have to have a vision, but that vision has to be practical."

Later, the ultimate description of what "practical" has come to mean in the 21st century was provided by William Mitchell, head of the Media Arts and Sciences Program and former dean of the School of Architecture and Planning. Mitchell, whose topic was "How Ubiquitous Digital Connectivity Adds Value to Floor Space," observed that broadband access, like indoor plumbing, has become a requirement rather than an amenity. He discussed how wireless technology is subtly shaping the spaces we build. "The paradox of spaces serviced by wireless is that the better the service, the less obtrusive it is," he said. "Architecture, freed from the constraints of 20th century technologies, can humanize space." At MIT, he noted, students have been enticed out of their dorm rooms and into appealing and connected public spaces, such as cafes and lobbies.

The keynote speech was delivered by Phillip Sharp, Nobel laureate, Institute Professor and director of the McGovern Institute for Brain Research.

Sharp was introduced by the center's executive director, Marion Cunningham, who posed the question that was in everyone's mind. "Several people have asked why we wanted a molecular biologist to be the keynote speaker at a real estate conference," she said, "and Dr. Sharp was one of them." She went on to explain that "Dr. Sharp's work reflects the best of MIT in all of its disciplines and dimensions." A rapt audience of real estate developers ingested a century's worth of molecular biology along with their box lunches.

The weekend's finale on Saturday night was a black-tie tribute to the center's co-founder and guiding spirit Hank Spaulding. Spauding received the center's new Visioneer Award for "energy and vision over a 55-year career that have left their indelible imprint throughout the real estate industry."

Two more Visioneer Awards were presented, one to the Walt Disney Co. for "its visioneering contributions to the real estate industry" and another to Hines, an international development firm, and its founder, Gerald D. Hines, "for their significant contributions to the built environment, including excellence in planning and design, construction and environmental leadership."

A surprise award went to the center's own associate director for education, Maria Vieira, "for 20 years of service as an outstanding champion of the MIT Center for Real Estate and a devoted friend to students, faculty and industry." It brought a standing ovation for the astonished Vieira. After that, everyone settled in for an evening of relaxing, mingling and dancing.

All in all, a weekend worth the 20-year wait.

MANDALA

PHOTO / **DONNA COVENEY**

Adorned with hats to show discipleship, MIT Chaplain Tenzin L.S. Priyadarshi, left, and Lama Dhondup Tsering ring ceremonial bells representing compassion at Simmons Hall Monday in the room where the sand mandala is on display.

Continued from Page 1

who said that each of the many different mandala images in the tradition first appeared as an internal visualization to someone meditating on specific qualities.

"What appeared in the mind, we try to re-create," he said. Buddhists believe that the creation of the mandala as a three-dimensional object brings those qualities into being.

The emphasis of this particular mandala, Priyadarshi said, "is altruism as a compassionate activity—not pity, not charity. Such altruistic activity enables us to see everything as equal." Priyadarshi will give a talk on Vajrasattva and the mandala tomorrow (April 7) at 7 p.m. in Simmons Hall.

Priyadarshi, who lives at Simmons Hall as a resident scholar and chaplain, says he believes that an emphasis on clear and lucid understanding and calmness can help MIT students in whatever path they choose.

"We are not looking for more Buddhists," the monk said with a smile. "The Buddhist community at MIT comprises people from many religions; they don't need to convert to be part of this community. As a chaplain, I am here to help them in their spiritual and mental growth."

Priyadarshi may be uniquely suited to bridge any religious gaps. As a 10-year-old boy he ran away from a Brahmin Hindu home on a spiritual quest to satisfy his intuitive longing for Buddhism. At his parents' request, he agreed to continue his secular education in a Christian school, but split his teenage years between a Buddhist monastery and a Hindu ashram. Later he studied physics in a U.S. Jesuit college and in 2003, obtained a master's degree in comparative religion from Harvard Divinity School. The 25-year-old has been a chaplain at MIT for three years.

This week Priyadarshi offers a number of Buddhist-oriented events, including creation of the second sand mandala at Simmons Hall, a talk on "Awakening Bliss, Generating Compassion" by author Robert Thurman, and a mandala workshop for children.

Priyadarshi and Dhondup later will sweep the sand into vessels and pour it into the Charles River, signifying the flow of insight, awareness and altruism throughout the world.

The mandala is displayed in the Simmons Hall Common Room, accompanied by recorded chants, "to calm the mind with sight and sound," said Priyadarshi. Public viewing hours are 10:30 a.m. to 2 p.m. and 4 to 7:30 p.m. through April 8, and on April 9 from 10 a..m. until 3 p.m., when the mandala will be swept away.

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

2 tickets available for Colombian Singer/songwriter Marta Gomez and her Group (#10 on Billboard charts in Jan.) 4/17, 7:30, Cambridge Multicultural Arts Center. $32/both tickets. rbatista@mit.edu or 617-253-0494.

HP Photosmart 7960 Photo printer. New in unopened carton. $150 firm. 781-391-0530.

Kettler inversion table. New in November, used to aid back injury recovery. Back better now, house too small to keep table. Paid $350, will sell for $250/bst. 258-1300.

Hayward Pool Super pump. 3/4 hp. Used one season. $275/bst. Laura at 253-3116 or ljtrudel@mit.edu.

HOUSING

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

Ocean front summer cabin, Mount Desert Island, ME: 2BD/1BA w/living/kitchen area; picture windows, deck overlooking water; stairway to beach. Mins from Acadia National Park, Bar Harbor. $1,000/week June-Sept. Steve at 253-5757 or chorover@mit.edu.

N.H. Lake Cottage Rental: 3BR/1BA Cottage; 7/1-9/15/05; 75 ft frm Lake Winnipesaukee; lrge scrnd porch w/lakeview; sandy community beach; sleeps 6; no smoking; pets okay; $855/week. Judy at 781-648-9442 or jrauch@mit.edu.

Newport, RI: Summer rental. Spacious 2BR, 2b apartment in quiet old neighborhood near First Beach and Cliff Walk. Fireplace, terrace, shaded lawns. Four weeks; period negotiable. esharris@mit.edu.

Melrose: Sunny 2 plus bedroom apartment, close to the bus line, T, comm. rail. Eat in kitchen, off street parking, W/D hookup. $1,200 plus utilities. thakkar@ccnmr.mit.edu.

VEHICLES

2001 VW Passat wagon, V4, manual, FWD, 65K, silver/black, moonroof, heated seats, new tires, roof rack, CD/premium sound, alloy wheels, excellent cond. $11,900. Kris at 617-253-0909.

'97 Subaru Legacy Wagon, 114K, good condition, AWD, auto, 4 new tires. $3,000. 617-491-6138 or jkirsch@mit.edu.

STUDENT POSITIONS

Positions for students with work study eligibility.

Zoo New England seeks candidates for multiple positions: from working in offices and helping with guest services to working with animals. Info on job listings, salaries: www.zoonewengland.org/involve/jobop.shtml.

Rec Place Afterschool is looking for substitute coaches/teachers. Camp experience a plus, especially sports or carpentry skills. Sense of humor a must! Newton near T. Good perks and pay! 617-332-7327.

PHOTO / **RACHEL ZUCKER**

Eleni Sikelianos

Sikelianos to read poetry

Eleni Sikelianos, great-granddaughter of famed Greek lyric poet Angelos Sikelianos and a noted poet in her own right, will present a poetry@mit reading on Thursday, April 7, at 7 p.m. in Room 6-120. A native of California, she now teaches at Naropa University in Boulder, Colo., but remains a Californian at heart. "Her melding of persons and place makes both contemporary and eternal, a remarkable 'California dreaming,' which can well carry all the old echoes. So she does what only a master poet can do—discovers the world once again," said the late poet Robert Creeley about Sikelianos' book-length work, "The California Poem," Her work "The Monster Lives of Boys and Girls" won a 2002 National Poetry Series award, and a memoir of her late father, "The Book of Jon," was recently published by City Lights.

Untitled (The Garment of Praise)

Put on the garment of praise
Boy and Girl of praise Joy
Move god on the lips

Joy or luck fell into a swoon
a barrel of light
sweet crude

an agent having power
to reduce, destroy, or consume
(catheretic)

Oh here comes a doggess sciomancer
divining love
and hate by means of shadows and
clouds

a beautiful bitch communicating with
ghosts of the living and dead

Sunlight falls across the body
The house creaks, inspiration hits

Move away

What are we doing here? All
our movements and actions
are helping or hindering
the dead

Musical journey spans the ages

Jean Chemnick
Office of the Arts

Mary Farbood is in a unique position to discuss the history of music. As a graduate student in the Media Lab, she has helped develop computer software for modern composers. And, she plays the harpsichord.

Farbood, who will present a harpsichord recital this Friday at noon in the MIT Chapel, is one of 50 young artists from around the world chosen to compete next month at the Prague International Harpsichord Competition. If she does well, she's likely to receive much wider exposure and professional engagements, she said.

She has not taken the traditional career path of a professional musician. Although she studied the piano as a child, she admits, "I wasn't motivated personally."

Then, when she was 17, Farbood developed a bad case of tendonitis in her hands and had to stop practicing for a year, which resulted in her going to Harvard instead of a conservatory.

At Harvard she became interested in computers. "All my energies had been focused on music," she said." I wanted to do something else while I had a chance." In high school, computers had been mysterious "black boxes." She got her chance to decode them when she majored in computer science as well as music.

Mary Farbood

Farbood played in several Harvard ensembles. Her sophomore year, the Bach Society performed the Brandenburg Concerto, and she played the harpsichord for the first time. Early music, like Bach's, was written for the harpsichord, which gives it its intended, subtler sound. "The music is harder to convey," said Farbood, "and the instrument is harder to use to convey the music." Farbood said she had trouble not playing it like a piano.

After graduation she enrolled in a composition program at Brandeis, but was disappointed. "I didn't like composing," she said, "and I didn't like the music I composed." She left after two years and enrolled in a Ph.D. program in the MIT Media Lab.

"It seemed natural to try to combine my interests," Farbood said. Having abandoned the idea of composing herself, she has instead worked on the development of Hyperscore, computer software that helps professional composers and small children alike create new music.

Developed by Professor Tod Machover at the MIT Media Lab as one of a series of new technologies called Hyperinstruments, Hyperscore replaces musical notation with computer graphics, allowing the composer to write music without knowing music theory.

While at the Media Lab, Farbood was offered an Emerson Music Fellowship across campus at MIT's Music Section and began her own training again. This time she chose the harpsichord over the piano because of her interest in early music. In December, she submitted a tape to the Prague competition.

At 30, Farbood is older than most of her competitors (and almost past the age limit for the competition). Her competitors will be full-time conservatory students, and her Media Lab research leaves her little time to prepare. But she is playing for herself now.

"I'd love to perform," she said. "I'll always play, whether as a profession or a hobby."

PHOTO COURTESY/ **CYPRESS QUARTET**

The Cypress Quartet (from left: Ethan Filner, viola; Jennifer Kloetzel, cello; Cecily Ward, violin; Tom Stone, violin) will perform an original work by Lecturer Elena Ruehr on Friday.

Quartet to premiere lecturer's work

Music and Theater Arts Lecturer Elena Ruehr had big shoes to fill when composing her string quartet commissioned by the Cypress String Quartet: Mozart's and Beethoven's.

Premiered recently by the quartet in San Jose, Calif., the piece is Ruehr's response to Mozart's "Dissonance" Quartet and Beethoven's Quartet Op. 59, No. 3 ("Razumovsky"). According to reviewer Richard Scheinin, "Ruehr's quartet sounds as if it has soaked up essential qualities from both: shifting light-dark moods and textures; great dancing rhythms; and, best of all, aria-like songs."

The quartet will present the Boston premiere of Ruehr's String Quartet No. 4 in a concert on Friday, April 8, at 8 p.m. in Kresge Auditorium. The concert will also feature the Mozart and Beethoven works.

Since its inception in 1996, the Cypress String Quartet has commissioned and premiered more than 25 works from many of America's leading composers. The quartet makes this music part of its regular touring repertoire.

Ruehr's works have also been commissioned and performed internationally by the Borromeo and Shanghai string quartets, Naumburg winning baritone Stephen Salters, the Boston Modern Orchestra Project and The Metamorphosen Chamber Ensemble. Her dance opera "Toussaint Before the Spirits" was performed to critical acclaim at Boston's Opera Unlimited Festival in 2003, and her work "Shimmer," for string orchestra, is available on Albany Records performed by the Metamorphosen Chamber Ensemble.

The Cypress quartet will be in residence at MIT from April 6–9. The residency was funded in part by the MIT Artists-in-Residence Program of the Office of the Arts and Music and Theater Arts at MIT.

The concert is presented by the Guest Artist Series and the Artist-in-Residence Program. For more information, call 617-452-2394.

ARTS NEWS

Kortney Adams, who received the S.M. degree in civil and environmental engineering in September 2000, has won the 2005 Independent Reviewers of New England Award for Best Supporting Actress in a Small Company for her portrayal of Mrs. Rochester in "After Mrs. Rochester" at the Wellesley Summer Theatre. The Awards Gala was held on March 21 at the Lenox Hotel Ballroom.

Julie Moir Messervy, who studied at MIT while at Wellesley and received master's degrees in both architecture and city planning from MIT in 1978, is receiving the Landscape Design Award at the American Horticultural Society's annual Great American Gardeners Conference. Messervy, recently in the news for her "South of France" environment created with Professor Tod Machover's musically interactive flowers for the Marshall Field's and Bachman's Spring Flower Show in Minneapolis, has also taught landscape design at MIT's Graduate School of Architecture.

"Home Sweet Gated Home," an installation by **Magda Fernandez**, administrative assistant in the Office of the Arts, is on view at the Allston Skirt Gallery (450 Harrison Ave., Boston) through April 30. The installation is an expanded version of a project Fernandez presented in Miami last summer as one of five finalists for the prestigious 2004 Cintas Foundation Fellowship in the Visual Arts. Fernandez will hold a public conversation about the work with Rose Art Museum curator Raphaela Platow at the gallery on Saturday, April 16 at 2 p.m.

Take a new look at lacquer

Asao Sakamoto, president of Studio Eyes in Japan, will speak on "The Future of Lacquer in Art and Science" on Tuesday, April 12, at 5:30 p.m. in Room E51-095. Sakamoto has a special interest in urushi, the sap of a family of sumac trees found in various parts of Asia and has experimented with its use in diverse artistic, industrial and scientific applications.

In addition to extending the traditional palette of colored lacquer by the use of titanium and smoked silver leaf, Sakamoto has investigated urushi's many properties, including its resistance to heat, water, static, oxygen and hydrogen. Most recently, he has explored the use of urushi as a noncorrosive coating for motors of artificial hearts and oil gauges that contain rare earth magnets, both of which are subject to oxygen corrosion.

The talk is sponsored by the MIT-Japan Program in collaboration with the Japan Society of Boston and in conjunction with "The Sakamoto Project" exhibition at Keiko Fine Japanese Handcraft (121 Charles St., Boston). For more information, call 617-253-3142.

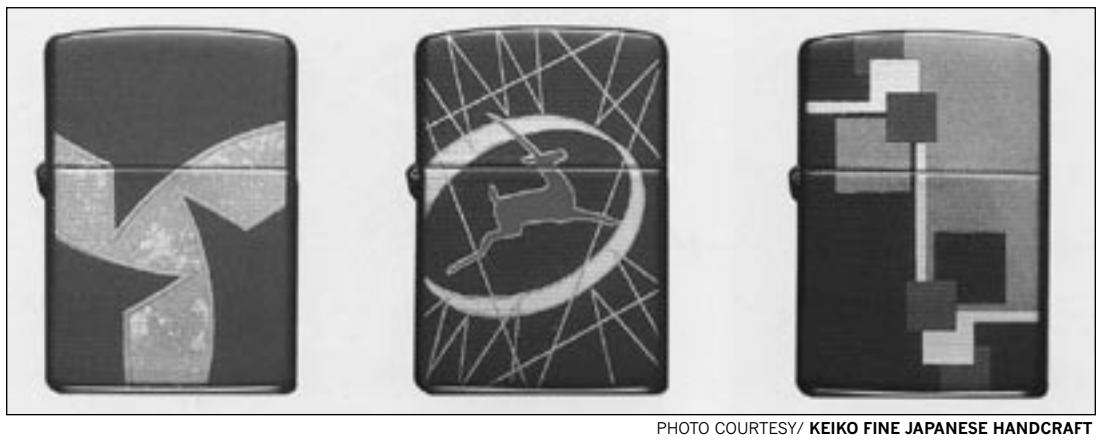

PHOTO COURTESY/ **KEIKO FINE JAPANESE HANDCRAFT**

Asao Sakamoto has experimented with a range of uses for lacquer, which adds zip to this collection of Zippo lighters. Sakamoto will be speaking on Tuesday, April 12, in Room E51-095.

MIT EVENT HIGHLIGHTS APRIL 6–10

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

Choreographer moved to speak

Lucinda Childs

Postmodern choreographer Lucinda Childs, whose ballet "Ten Part Suite" recently received its world premiere in Boston Ballet's "Falling Angels" program, will present a guest lecture in MIT's "Traditions in American Concert Dance" course on Thursday, April 7, from 1–2:30 p.m. in Room 1-150.

Lecturer Iris Fanger teaches the class. Space is limited and restricted to members of the MIT community. To attend, please e-mail ifanger@mit.edu.

WEDNESDAY April 6

Sand Mandala for Insight, Awareness and Altruism
Millions of grains of colored sand used to form an intricate 4-foot-diameter diagram of the enlightened mind and the ideal world. 10:30 a.m.-2 p.m. Simmons Hall.

"State INR and Its Role in the Intelligence Community"
Talk by Dr. Thomas Fingar. Noon. Building E38, 6th Floor Conference Room. 253-7529.

"Climate Change and the American Response"
Talk by Dean James Gustave "Gus" Speth of the Yale School of Forestry and Environmental Studies. 3 p.m. Room E51-115. 253-3478.

"Religion and Power in Saudi Arabia"
Talk by Abdulaziz Al-Fahad 6 p.m. Room 66-110. 258-8552.

THURSDAY April 7

Practical Career Strategies for Ph.D.s
Professional development strategies for young scientists and engineers. 1 p.m. Room 10-250. 253-4733.

Henry W. Kendall Memorial Lecture
Talk by Professor Martin Claussen, Potsdam University, Germany, "Vegetation Dynamics and the Earth System." 4 p.m. Room 26-100. 253-3382.

Poetry@MIT: Eleni Sikelianos
Reading by the author of "The California Poem," "The Book of Jon" and others. 7 p.m. Room 6-120. 253-7894.

FRIDAY April 8

Advanced Music Performance Student Recitals
Mary Farbood (G), harpsichord. Noon. MIT Chapel. Joey Zhou, piano, plays works of Chopin, Debussy and Mussorgsky. 5 p.m. Killian Hall. 253-9800.

Cypress Quartet
Mozart's "Dissonant Quartet." 8 p.m. Kresge Auditorium. 253-9800.

Awakening Bliss, Generating Compassion
Talk by Robert Thurman, Prof. of Buddhism, Columbia Univ., with Tibetan flute performance. Adv. tickets encouraged for MIT; required for non-MIT. $15 non-MIT. 7 p.m. Simmons Hall.

BSU Jazz/ Neo-Soul Night Series, Part I
World-renowned instrumentalists Tia Fuller (on alto saxophone) and Sean Jones (on trumpet) and their quintet. 7:30-10 p.m. Room 50-105.

SATURDAY April 9

Make Your Own Mandala: A Workshop for Kids
A fun event appropriate for children age 5 and older. All materials provided. Participants must be accompanied by an adult at all times. 11 a.m.-2 p.m. Simmons Hall.

Emerson Scholars Student Recital
Voice and Winds. Noon. Killian Hall. 253-9800.

Dissolution of the Sand Mandala
Closing ceremony for Vajrasattva Sand Mandala, on view from April 2 to 9. The colored sands of the mandala will be swept up and poured into a nearby river which will carry, Buddhists believe, healing energies throughout the world. 3 p.m. Simmons Hall.

SUNDAY April 10

Tax Preparation Help
Grad students can get free help from IRS-certified tax consultants at this Graduate Student Council-sponsored tax workshop. 10 a.m.-5 p.m. Sidney-Pacific Multi-Purpose Room.

Emerson Scholars Student Recital
Harp, piano and strings. Noon. Killian Hall. 253-9800.

Gallery Talk
Talk by Hiroko Kikuchi, List Visual Arts Center Education/ Outreach Coordinator. 2 p.m. List Visual Arts Center. 253-4680.

"Kimsooja: Seven Wishes and Secrets"
Talk by artist Kimsooja on her exhibit on view Feb. 3-April 10. 6:30 p.m. List Visual Arts Center. 253-4680.

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

"COMPANY"
Apr. 8
Musical Theatre Guild production of Stephen Sondheim's musical. $10, $8 MIT community. April 8–10, 14–16, 8 p.m. (April 10, 2 p.m.)
Kresge Little Theater
8 p.m.

LIBRARIES' BOOK SALE
Apr. 13
Selection includes economics, business, management, political and social science books. 253-5693.
Dewey Plaza
10 a.m.–3 p.m.

ART AUCTION AND RAFFLE
Apr. 15
Benefit to rebuild communities in tsunami-affected areas.
Lobby 10
Noon–7 p.m.

MIT EVENT HIGHLIGHTS APRIL 11–17

MONDAY April 11

"A Gentle Transition to Reliable Solar Cooking"
Talk by Moushine Serrar on hybrid gas-solar ovens. 12:30-2:00 p.m. Stella Room. 253-0463.

"Nation, Myth and Memory: The Reception of Ghurid Architecture East of the Indus"
Talk by Dr. Alka Patel of the American Institute of Indian Studies. 5:30 p.m. Room 3-133. 253-1400.

"Consolidating Iraqi Democracy: The Institutional Context"
The fifth event in the semester-long "Reconstructing Iraq" colloquium series moderated by Dr. Yosef Jabareen. 5:30 p.m. Room 3-270. 324-0318.

CAVS Artist's Presentation: Michael Smith
6:30 p.m. Room N52-390. 452-2484.

TUESDAY April 12

"From Kamikaze Aircraft to the Bullet Train"
Talk by Takashi Nishiyama. Noon. Room E56-100. 253-6989.

"Man Machines: Race and War"
Writer Reggie Hudlin, "Birth of a Nation" comic book project. 2 p.m. Room 12-102. 253-5038.

"The Future of Lacquer in Art and Science"
Lecture by Asao Sakamoto on his experimental lacquer work. 5:30 p.m. Room E51-095. 253-3142.

Architecture Lecture
Talk by architects Sara Caples and Everardo Jefferson. 6:30 p.m. Room 10-250. 253-7791.

Chicks Make Flicks
Marilyn Levine, "Life, Death and Baseball." 7 p.m. Room 32-134. 253-8844.

WEDNESDAY April 13

"The Body"
Works by artists and engineers who have designed new technologies to see, record and transform live movement. 10 a.m.-5 p.m. MIT Museum. 253-4444.

2nd Student Mural Project Deadline
All submissions must be original two-dimensional creations. Winning design will be reproduced as a high-quality wall-sized print to be displayed in the Stata Center. By 5 p.m. Room E15-205.

Artist Behind the Desk
Jazz musician Bob Toabe, instructor at DAPER. Noon. Killian Hall. 253-9821.

"The Argumentative Indian"
Talk by Harvard Professor Amartya Sen about his new book. 7 p.m. Room 34-101. 258-6745.

THURSDAY April 14

"Crosstalk—Why E-Learning Projects Tend to Fail"
Professor Shigeru Miyagawa's Crosstalk Seminar on Educational Change. 2 p.m. Room 56-114. 253-0115.

"Global Water Crisis: Myth or Reality?"
Annual John R. Freeman Lecture. 6 p.m. Wong Auditorium. 452-3022.

HTC Forum
"Conceptual Art and Architecture" talk by Nana Last, Rice University. 6:30 p.m. Room 32-124. 258-8438.

"Women's Rights and Islam"
First program in a four-part series on religion in the 21st century. 7 p.m. Building W11-Main Dining Room. 253-0108.

FRIDAY April 15

"Music in Stacks"
Composition by Assistant Professor Brian Robison that can only be performed in a music library. Noon. Room 14E-109. 253-5686.

"A Feminist Toolkit for Thinking Reproductively"
Talk by Claudia Castaneda. Noon. Room E51-275. RSVP 253-4062.

Advanced Music Performance Student Recital
Lindy Blackburn (G), piano. Works of Bach, Chopin, Haydn and Rachmaninoff. 5 p.m. Killian Hall. 253-9800.

MIT Chamber Chorus
William Cutter, music director. 8 p.m. Kresge Auditorium. 253-9800.

SATURDAY April 16

MIT Press Bookstore Loading Dock Sale
Tons of books will be on sale at drastically reduced prices—up to 90 percent off the original retail price. April 16 and 17. 10 a.m.-7 p.m. Building E38. 253-5249.

Varsity Softball vs. Harvard JV (Doubleheader)
Noon. Briggs Field. 258-5265.

MIT Ballroom Spring Dance
Evening of social dancing including ballroom and latin dances, along with favorites such as salsa, hustle and merengue. 8 p.m. Sala de Puerto Rico. 686-0823.

SUNDAY April 17

"Phase II: Visualizing Physics: Transforming Science Learning at MIT"
An insider's view of how MIT is redesigning the way it teaches physics. Noon-5 p.m. MIT Museum. 253-4444.

Varsity Men's Tennis vs. Williams College
1 p.m. du Pont Tennis Courts. 258-5265.

International Folk Dancing (participatory)
8 p.m. Lobdell Dining Hall. 253-FOLK.