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TechTalk
SERVING THE MIT COMMUNITY

Engineering education workshop draws nat'l leaders

PHOTO / **DONNA COVENEY**

MIT President Susan Hockfield chats with John Marburger, science advisor to President Bush, at a luncheon held Thursday, Oct. 20, as part of a daylong MIT workshop on engineering education.

Elizabeth A. Thomson
News Office

President Bush's science advisor, the head of the National Science Foundation and other top scientists and engineers from around the country gathered at MIT last Thursday, Oct. 20, to push forward a national conversation on engineering education in the 21st century and the challenges, both here and abroad, that will affect it.

"One of the reasons I am here is to let you know that we are listening — my office, and [that of] the president," said John H. Marburger, science advisor to the president and director of the Office of Science and Technology Policy.

The one-day workshop at MIT grew from issues discussed in the recent National Academy of Engineering report, "The Engineer of 2020: Visions of Engineering in the New Century," as well as National Science Board (NSB) reports that identified troubling trends such as the low number of domestic engineering students.

MIT President Susan Hockfield said that when she learned of the workshop, she was very excited because "MIT is committed to innovations in engineering education, and that's really what this workshop is about."

She noted fundamental challenges that must be addressed, such as the "challenge of interest." "Kids and Americans today fail to be inspired by engineering, by science, and by mathematics," she said, noting that only 17 percent of U.S. bachelors' degrees are in science and engineering compared to 68 percent in Singapore.

She also stressed that to move engineering forward we must "recruit aggressively" women and minorities in this country. "Engineering can't continue to be dominated predominantly by men — by white men."

The United States continues to lead the world in science and technology. That said, "the redistribution of

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MIT alum nominated to head Fed

Sarah H. Wright
News Office

MIT alumnus and macroeconomist Ben S. Bernanke (Ph.D. 1979), chairman of the President's Council of Economic Advisers, has been nominated to become chairman of the Federal Reserve. If approved by the Senate, Bernanke will replace Alan Greenspan, Fed chairman since 1987, early next year.

President Bush announced Bernanke's nomination for "Banker in Chief" at a press conference in Washington on Monday, Oct. 24.

Bernanke has "earned a reputation for intellectual rigor and integrity. He commands deep respect in the global financial community," Bush said.

With the legendary Greenspan standing beside him, Bernanke said that, if confirmed, his "first priority will be to maintain continuity with the policies and strategies established during the Greenspan years."

Bernanke, 51, is known for his deliberate, even contemplative, analytic style, his dry sense of humor and his detachment from the political fray. His MIT colleagues were unsurprised at Bernanke's emphasis on continuity for the Fed.

"He has always been thoughtful, attentive, precise. He's the kind of person you'd want as a surgeon," said lifelong friend Kenneth Manning, MIT's Thomas Meloy Professor of Rhetoric and of the History of Science.

Manning and Bernanke grew up in Dillon, S.C., a then-segregated town of 6,300 where Bernanke's father owned a drugstore. Both attended Harvard University,

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PHOTO / **DONNA COVENEY**

A new ambulance bay and ready room in the loading dock and basement of the Stata Center were dedicated Oct. 19. Nicolas Wyhs (S.B. 2005), left, and undergraduates Rachel Williams and William Baker are three of the students who run the service.

MIT ambulance service a Class One act

Sasha Brown
News Office

MIT has the only Class One, student-run ambulance service in the state, and on Oct. 19, the Institute dedicated a bay and bunk room in the loading dock and basement of the Stata Center to house it.

"This is a very important day in the history of our service," said Maryanne Kirkbride, clinical director for campus life in the medical department. The bay provides shelter for the ambulance, which by law must be docked indoors. EMTs can sleep in the bunk room when they are on call — and there are people on call every night.

The Class One designation means that the ambulance is certified to transport patients to area hospitals as well as to MIT Medical. All the EMTs receive comprehensive first-aid training.

The Student Emergency Medical Society (SEMS) started in the fall of 2000 to train student EMTs. In the early spring of 2001, SEMS proposed taking over the MIT ambulance.

"Most of our EMTs and patients enjoy working with each other. For the patients it's a comfort to know that the person taking care of them is a fellow

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Institute of Medicine elects 2 from MIT

Anne Trafton
News Office

Emilio Bizzi, Institute Professor in the Department of Brain and Cognitive Sciences, and Peter Szolovits, professor of computer science and electrical engineering, have been elected to the Institute of Medicine.

Bizzi and Szolovits are among 64 new members of the Washington, D.C.-based institute, which made the announcement on Oct. 24. The Institute of Medicine (IOM) is one of the four national academies, along with the National Academy of Sciences, the National Academy of Engineering and the National Research Council.

Bizzi, a principal investigator in the McGovern Institute for Brain Research, focuses his research on how the central nervous system translates brain messages signaling motor intent into muscle activation. He is a member of the National Academy of Sciences and is currently serving as secretary of the American Academy of Arts and Sciences.

Szolovits' research centers on the application of artificial intelligence methods to problems of medical decision-making and design of information systems for healthcare institutions and patients. He is a professor of health sciences and technology in the Harvard/MIT Division of Health Sciences and Technology and head of the Clinical Decision-Making Group in the MIT Computer Science and Artificial Intelligence Laboratory.

The Institute of Medicine was established in 1970 by the National Academy of Sciences to honor professional achievement in the health sciences and to serve as a national resource for independent analysis and recommendations on issues related to medicine, biomedical sciences and health.

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where Bernanke received the B.A. in economics in 1974, followed by the Ph.D. in economics from MIT. Bernanke was visiting professor of economics at MIT in 1989, an associate professor of economics at Stanford and a professor and department chair of economics at Princeton from 1996 to 2002.

He joined the Fed's Board of Governors in 2002.

Olivier Blanchard, MIT professor of economics, said, "Ben combines a keen sense of how to translate theory into actual policy, and an unusual ability to communicate. He will be a great chairman."

Bernanke has already influenced the Fed as governor and in his speeches and has developed a reputation for challenging conventional thinking.

Bernanke and Greenspan differ on inflation targeting, a practice in which the central bank sets an explicit goal for inflation. Bernanke favors targeting, which would hold the Fed accountable for meeting its own goals and make it harder to downplay economic risks.

The Fed's decision this year to begin providing two-year inflation forecasts has been credited to Bernanke's influence.

In addition to inflation targeting, Bernanke has expressed commitment to greater communicativeness and transparency for the Fed. Greenspan, while a giant of his time, was known for a certain opacity.

"You want to release information that helps the market and the public achieve more accurate expectations of future policy and the future state of the economy," Bernanke said in an interview published by the Fed.

Bernanke's interest in helping the public to understand and predict economic changes through Fed policies is reflected in his 2000 book, "Essays on the Great Depression," which examines America's devastating economic collapse of the 1930s. The lessons from that decade, Bernanke has said, include the urgent role of financial stability in maintaining social and political stability and the importance of international economic cooperation.

Young economists will be glad to learn Bernanke sees an important role for academic research in sharpening Fed policies.

"Economics is like trying to learn how to repair a car with the engine running. It's always changing. Having good economists to interpret data and present policy alternatives has a beneficial effect on policymaking. And good economic policy makes a very big difference to the welfare of the average person," he said.

Bernanke and his wife, Anna, have two children.

PHOTO / **CHRIS MILLIMAN, COURTESY OF HERTZ FOUNDATION**

MIT Professor Daniel W. Stroock, right, meets Stroock-Hertz Fellowship recipient Monika Schleier-Smith, center, an MIT graduate student working in quantum optics, and Hertz Fellow John Holzrichter, president of the Fannie and John Hertz Foundation, in Cambridge on Friday, Oct. 21.

Stroock meets Stroock fellow

The MIT community is very familiar with endowed fellowships named for their donors. But when Ray Sidney '95, an early software engineer at Google, decided to make a gift, he established the Stroock-Hertz Fellowship in honor of his MIT math professor, Daniel W. Stroock, the Simons Professor in Mathematics.

Stroock met the recipient of the Stroock-Hertz Fellowship, MIT physics graduate student Monika Schleier-Smith, at a dinner given by the Hertz Foundation for Hertz Fellows in the Boston area on Friday, Oct. 21.

Institute Professor John M. Deutch and Hertz Fellow Alice Gast, who is MIT's vice president for research and associate provost, were featured speakers at the dinner, which followed a meeting of the foundation's board of directors.

Also attending were Brett Bethke and Stephen Samouhos, both Hertz Fellows studying for their doctorates at MIT.

Hertz Fellows receive up to $240,000 each for up to five years of study toward their doctorates.

Chemists garner ACS awards

The American Chemical Society recently announced that several MIT chemistry professors have won awards for 2006.

Richard Schrock, the Frederick G. Keyes Professor of Chemistry, will be honored with the F. Albert Cotton Award in Synthetic Inorganic Chemistry. Schrock this month shared the 2005 Nobel Prize in chemistry.

Barbara Imperiali, the Class of 1922 Professor of Chemistry and Professor of Biology, was chosen for the Ronald Breslow Award for Achievement in Biomimetic Chemistry.

Stephen Buchwald, the Camille Dreyfus Professor of Chemistry, won the ACS Award for Creative Work in Synthetic Organic Chemistry, and Alan Davison, chemistry professor emeritus, won the ACS Award for Creative Invention.

Alice Gast, vice president for research and associate provost, was selected as the winner of the ACS Award in Colloid and Surface Chemistry.

The awards will be presented at the American Chemical Society meeting in March 2006 in Atlanta.

WORKSHOP–

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engineering talent is going to be the battlefield of global competitiveness in the future," said Arden L. Bement, head of the National Science Foundation. "We have an advantage. We just can't become complacent."

He further noted that if U.S. industry can find engineering talent in the developing world for 20 cents on the dollar, "they're going to do so, and probably should."

So the challenge for U.S. engineering schools is to "provide students who offer five times the value added," he said.

Commenting on the American public's sometimes negative view of the discipline, he said, "more than anything else we need a Carl Sagan-quality spokesman for engineering."

Rather than focus on federal science policy, Marburger, who's been an engineer, physicist and academic, commented on the issues involved from a personal perspective.

He stressed the importance of individual faculty members and their influence on students. "The key to improving education of any kind is [a professor's] acceptance of the responsibility [involved in] teaching students."

He noted that the "number one fact I'll take away from this morning is that 98 percent of the students who drop out of engineering cite bad teaching as the cause."

The workshop was sponsored by the NSB and hosted by the Engineering Systems Division of MIT's School of Engineering.

Faculty member earns tenure

David Darmofal is one of the 25 professors granted tenure in May. His profile and photograph were inadvertently omitted in last week's issue of Tech Talk. Tech Talk regrets the error.

David Darmofal

Aeronautics and Astronautics
Education: B.S.E.1989 (University of Michigan); S.M. 1991 and Ph.D. 1993 (MIT)
Joined MIT faculty: 1995

Darmofal is a world leader in the computation of aerodynamic flows for design and in the robust aero-thermal design of jet engines. He is a national leader in aerospace design.

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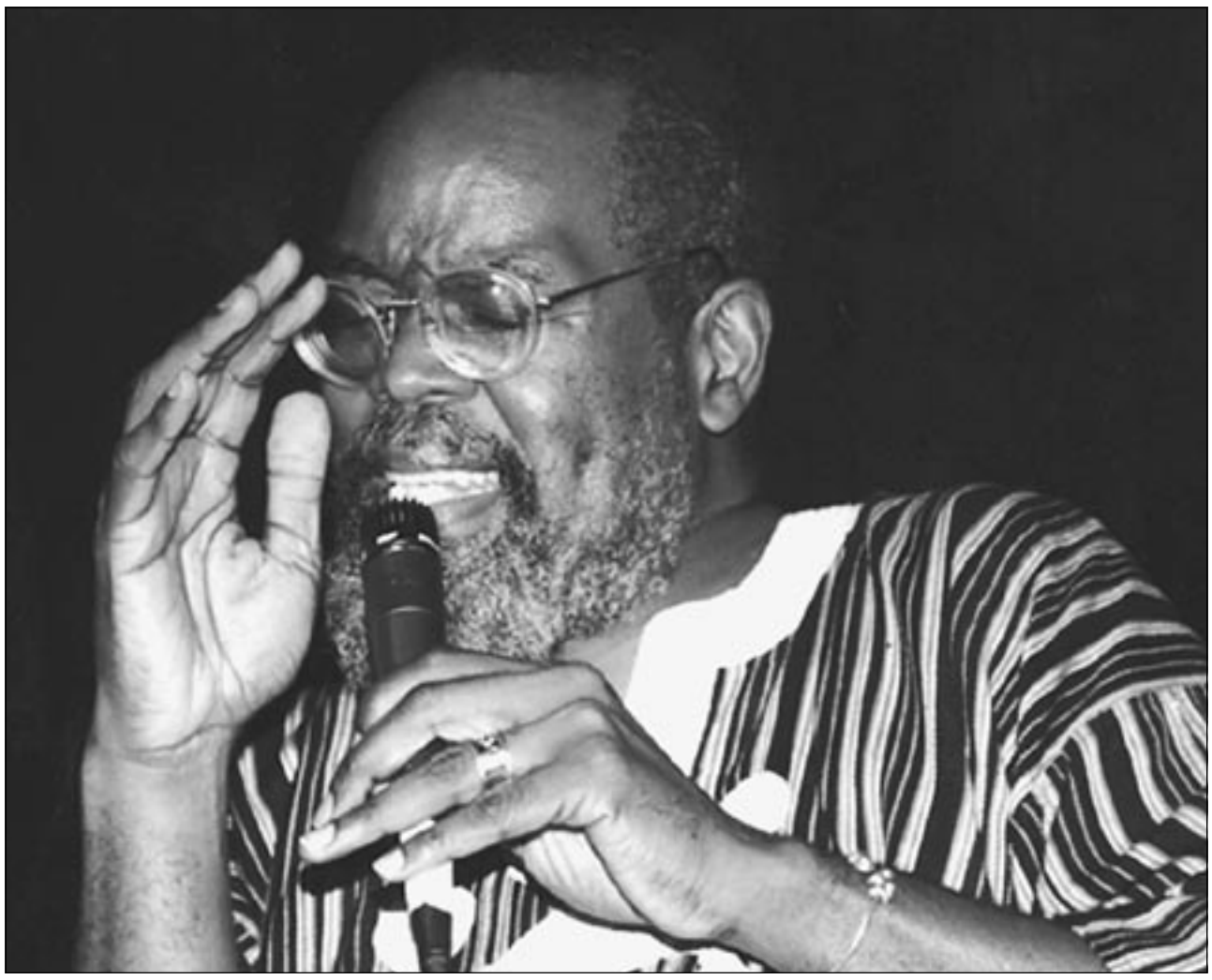

PHOTO COURTESY / **KALAMU YA SALAAM**

Author, educator and filmmaker Kalamu Ya Salaam of New Orleans will begin an artist's residency at MIT tomorrow.

Louisiana filmmaker joins MIT

Sarah H. Wright
News Office

The creator of an online project to document the lives of residents of New Orleans, who was himself displaced by Hurricane Katrina, will begin a weeklong artist's residency at MIT on Oct. 27.

Kalamu Ya Salaam — author, educator, filmmaker and creator of the narrative archive, "Listen to the People: The Neo-Griot New Orleans Project" — was forced to move to Tennessee following the hurricane and subsequent flooding.

A producer and disc jockey for WWOZ, 90.7FM in New Orleans before the hurricane, Salaam, 58, whose name means "Pen of Peace," will focus his activities at MIT on discussions of the social, political and cultural impact of Hurricane Katrina and its aftermath.

"New Orleans has been divided into wet and dry areas. The dry areas are predominantly white and wealthy. The question of 'rebuilding' New Orleans is a question of how many 'wet' citizens will be brought back into the city," Salaam said.

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Salaam will also share his experience with how digital technologies can support and enhance community development and intercommunity relations.

Ayida S. Mthembu, associate dean for student support services, organized Salaam's visit to MIT.

"With his visit to MIT, we will have someone on campus who will make sure we as a community can talk about the whole effect of Katrina. He will raise awareness of the deeper issues," Mthembu said.

Salaam will continue work on his project, "Listen to the People," while residing at MIT, Mthembu said. Working with a videographer, Salaam intends to interview anyone at the Institute or in the Cambridge/Boston area who was affected by Hurricane Katrina.

"By continuing his work, he will show how artists and scholars rise to the occasion, when so much has been taken away. His presence gives students a chance to see that art is relevant to this particular situation and how an artist can respond by asking, 'How can I be helpful, using my skills?'" Mthembu said.

Salaam will participate in other events during the week.

On Friday, Oct. 28, in Room 4-231 at 7 p.m., Salaam will join Mthembu's film-series seminar, "Topics in Pan-African Studies," speaking on issues of race and class in relation to Katrina, and showing video clips from "Listen to the People."

On Wednesday, Nov. 2, in Room 4-163 at 7 p.m., Salaam will read from his own poetry and prose about New Orleans culture and the impact of displacement.

Salaam is a co-founder (with Kysha Brown) of Runagate Multimedia, a publishing company, and he is the moderator of e-drum, a listserv of more than 1,600 black writers. His latest movies include "On His Way," a documentary about jazz funerals.

The recipient of a 1999 Senior Literature Fellowship from the Fine Arts Work Center in Provincetown, Salaam has published the anthology "From a Bend in the River: 100 New Orleans Poets" (Runagate Press, 1998).

To participate in Salaam's "Listen to the People" project, please contact Mthembu at mthembu@mit.edu.

Salaam's residency at MIT is sponsored in part by the Program in Writing and Humanistic Studies.

Professors weigh in on planning for new New Orleans

Sasha Brown
News Office

"The destruction of New Orleans was the tip of an iceberg," Professor Anne Whiston Spirn asserted at a symposium held Oct. 18.

Through her research, Spirn has found the poorest residents of many cities living on buried floodplains, suffering the effects of mold, frequent floods, subsidence and cave-ins. In many cases, people are forced to abandon their homes, Spirn said.

Spirn, an author and MIT professor of architecture and urban studies and planning, penned an award-winning 1984 book about nature's role in city planning called "The Granite Garden: Urban Nature and Human Design." Spirn spoke during the third in a series of four symposia exploring the "Big Questions After Big Hurricanes."

Speakers at this symposium, titled "How Can We Plan for a Safe and Sustainable Region?," focused heavily on the lack of planning evident following Hurricane Katrina.

"It is unconscionable that there was no plan for this occasion," said Spirn. "This is not a surprise. Why are we scrambling now?"

Anne Whiston Spirn

Spirn is especially interested in city planning that takes nature into account. "Cities are part of nature," said Spirn. "If we saw them that way, we would design them differently … Every city is prone to some sort of natural hazard."

Professor Chiang Mei of civil and environmental engineering drew parallels to other flood-plagued regions, including Venice, Italy, and the Netherlands. "They are very different in nature and scope, but they face a similar problem," said Mei.

The current solution in Venice is a series of mobile gates across the three inlets that lead to the islands, but the political debates on a number of environmental and other issues have slowed progress. In the Netherlands, which lost 1,800 people in the North Sea Storm of 1953, the solution was to build a series of dikes or dams, which changed the ecology and morphology of the blocked estuaries. In the more recent projects, movable gates were constructed instead, to allow tidal flow in and out of the estuary and to preserve the natural balance.

Among the lessons Mei gleaned from his explorations? It is "important to have the community and the engineers work together," Mei said.

Professor Michael Fischer of anthropology and the Program in Science, Technology and Society discussed the social effects of disaster.

Although there has been talk of mega projects in New Orleans, such as super sea walls or "floating city" reconstruction, Fischer argued that the role of the local communities in any reconstruction needs to be fostered if there is not to be mere gentrification or a nostalgic rebuilding.

Fischer called for New Orleans reconstruction to become an experimental urban space for deliberative democratic planning, drawing upon the black churches, black universities, civil rights organizations, burial and second line societies and neighborhood organizations. At stake, he said, is the Creole, African-American, Cajun and Southern amalgam that has been a distinctive source of U.S. culture.

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MIT student, who understands the pain and struggle of going through MIT," said Nicolas Wyhs (S.B. 2005), who, along with Mike Folkert (S.B. and S.M. 1998; Ph.D. 2005) and Sam Schweighart (S.B. 2005), founded the program.

Most of the calls are related to sports: sprains, knee injuries, etc., said Whys. Other calls are for flulike symptoms and chest pains. The MIT EMTs are trained to deal with a variety of medical emergencies.

The student ambulance can often respond faster than a traditional call to 911 since the EMTs know the campus. Additionally, many students feel more comfortable calling MIT EMTs as opposed to the city's first responders. "It lowers their barrier for calling when they need help," said Whys.

The EMTs can be summoned by calling 100 or x3-1212 from a campus phone or 617-253-1212 off campus.

According to their website, an MIT EMT is responsible for "issues in pre-hospital emergency medicine, including patient assessment, cardiopulmonary resuscitation, bleeding control, bandaging, splinting, shock management, poison control and extrication techniques."

The responsibility is huge. Last year, the roughly 60 volunteers logged 10,000 hours of service and responded to roughly 700 calls. "It really is a system in which the students are a vital component," said Bud McDonough, senior inspector with the Department of Health.

PHOTO / **DONNA COVENEY**

Priscilla Gray gets a tour of the new bunk house for ambulance workers from Nicolas Wyhs '05 on Oct. 19.

The students are expected to be there, said McDonough. "This is very hard volunteering," he said. "Part of the system depends on you."

It is a great opportunity though, he said. "The organizational management skills are real-life skills that are transferable in the future," McDonough said.

Although there are universities with Class One ambulances and also schools that have student-run services, MIT is the only school in Massachusetts that has both, said McDonough. "I'll admit I was skeptical at first," he said. "But once I was aware of the adult leadership and help they have had, my apprehension was allayed."

The project has support from the Division of Student Life, MIT Facilities, MIT Police, MIT Environmental Health and Safety, the Medical Department, the Office of the Provost and the Executive Vice President as well as the MIT Insurance Office. Former MIT President Paul Gray and his wife, Priscilla Gray, have also been supportive, donating both funds and time. The Grays attended last week's dedication.

"It has been a real group effort," said Kirkbride.

The service has been very important to the staff and student community, said Wyhs. "The service provides MIT with a group of medically knowledgeable people, which helps to promote better health throughout the community," said Wyhs. "Even while off duty, our EMTs get consulted regarding sick and injured people. These consultations help students and staff make decisions about their health and well-being, which absolutely makes MIT a safer, healthier place to live."

Protein scientists borrow tool from metal research

Elizabeth A. Thomson
News Office

Scientists have discovered that a tool normally used to improve stainless steel and other metal alloys can be applied to a decidedly nonmetallic substance: protein.

Researchers from MIT, the University of Wisconsin at Madison and DuPont reported their findings in the Sept. 30 issue of Physical Review Letters.

Scientists work with proteins just as they work with metals and other inorganic materials, designing new substances with enhanced properties, such as the ability to survive at high temperatures. But doing so involves sorting through the nearly endless possible ways to rearrange a protein's components, called amino acids — an extremely time-consuming and computer-intensive task.

By applying a computational technique for alloy design called cluster expansion, the MIT researchers and their colleagues were able to search through potential amino acid configurations up to 100 million times faster than with conventional techniques. The work could prove useful in many fields, including medicine and biotechnology, which stand to benefit from the revamped proteins with superior properties.

Authors are UW-Madison Assistant Professor Dane Morgan, who initiated and led the project as a postdoctoral researcher in materials science and engineering at MIT; MIT Professor Gerbrand Ceder of materials science and engineering; MIT Assistant Professor Amy Keating of biology; MIT graduate students Fei Zhou (physics) and Gevorg Grigoryan (biology); and Dupont scientist Steve Lustig.

Commenting on the interdisciplinary nature of the work, Ceder noted that "as a researcher used to dealing with crystalline matter such as metals and oxides, the world of biology is pretty intimidating. But piece after piece you start to see that many of the scientific problems in biology have parallels in other fields."

Keating said, "It was fun and exciting to work together. We encountered the usual barriers that come up in joint work between different fields — unfamiliar vocabulary and different conventions — but we learned a lot from one another through the process."

The similarities between alloy and protein design first struck Morgan as he attended an MIT computational biology course taught by Keating and others.

"In an alloyed material, there are a number of different elements — such as nickel, chromium and iron in stainless steel — which are arranged on a lattice of sites," Morgan said. "It's the same thing with a protein: You have different amino acids occupying various sites in the protein backbone." The trick is determining exactly how to reshuffle these components to enhance the properties of the larger structure, whether it's a metal or a biological molecule.

Each protein's function depends on its unique three-dimensional structure, which, in turn, rests on the molecule's specific linear chain, or sequence, of 20 different amino acids. In protein design, scientists start with a protein of known sequence, structure and function — such as an industrial enzyme that breaks up grime. They then hunt for modified amino acid arrangements that augment the molecule's natural function.

Beginning with an existing protein structure does reduce the number of possible ways to rearrange the amino acids, but the numbers are still mind-boggling.

"For a sequence of just 100 different amino acids, you have 20^{100} possible combinations," Morgan said. "My guess is this is more than the number of atoms in the universe."

"Cluster expansion breaks the design problem into meaningful pieces that you can get your brain and your computer around," Morgan said.

To demonstrate the ability of cluster expansion to manage this complexity, the team focused on protein stability. Highly stable proteins fold into tight three-dimensional structures; less stable ones tend to fall apart. Because a protein's stability relates to its energy in the folded, 3-D state, scientists can calculate an energy term to predict whether a particular amino acid sequence will adopt a robust structure.

Cluster expansion breaks an amino acid sequence into small subclusters, consisting of one, two, three or more amino acids. An effective energy term is then determined for every possible amino acid sequence within each subcluster. Once the energies of each subcluster are known, they can be quickly added to give the energy of the entire sequence.

When the team applied the method to two well-known proteins, they found it calculated amino acid sequence energies that matched well with those computed by an established technique. The difference? The traditional technique needed more than three minutes to make each energy calculation while cluster expansion took just a microsecond.

Keating is excited about the potential contribution of cluster expansion to biology. "It may make some genomic studies that we have been dreaming about feasible whereas they really weren't before."

The work was funded by the National Institutes of Health and the Dupont-MIT Alliance.

PHOTO / **DONNA COVENEY**

From left, Brian Shieh, James Labuz and Andrew Greenhut prepare their banana-harvesting device for a mockup review in 2.009.

Seniors prepare for harvest

Sarah H. Wright
News Office

Seniors in mechanical engineering Brian Shieh, James Labuz and Andrew Greenhut, all students in course 2.009, Product Engineering Processes, had everything they needed to make their banana harvester work, right down to 25 pounds of green banana stalks.

But just hours before their mockup review for faculty and fellow students on Oct. 20, their PVC-pipe prototype was still wobbling in the Building 3 stairwell.

Team member Alex Nelson, also a senior in mechanical engineering, described the 2.009 assignment and outlined the banana team's plan.

"We're supposed to build a harvester to be used in agriculture. We designed a mechanism to make it easier to pick bananas and carry the bunches across the plantation for processing. Our idea is to have a cutting mechanism drop the 120-pound bunches into the bag, then use a pulley system to lower it," said Nelson.

The banana harvesting group is one-half of a team working on a harvesting products theme for 2.009. The other half is developing a citrus fruit harvesting system. After the mockup review, the students will pick the most promising of the two designs for development into a fully functional alpha prototype. The gala annual 2.009 final presentations will be held on Monday, Dec. 12.

The 2.009 banana harvesting team members are Shieh, Labuz, Greenhut, Nelson, Kim Straub, Jason Atkins, Becky Romatoski and Adam Kaczmarak. All are seniors in mechanical engineering.

Whitehead research opens door to new stem cell work

David Cameron
Whitehead Institute

Scientists at MIT and the Whitehead Institute for Biomedical Research have successfully demonstrated that a theoretical – and controversial – technique for generating embryonic stem cells is indeed possible, at least in mice.

The theory, called altered nuclear transfer (ANT), proposes that researchers first create genetically altered embryos that are unable to implant in a uterus, and then extract stem cells from these embryos. Because the embryos cannot implant, they are by definition not "potential" human lives. Some suggest that this would quell the protests of critics who claim that embryonic stem cell research necessitates the destruction of human life. Scientists and ethicists have debated the merits of this approach although it had not been proved possible.

"The purpose of our study was to provide a scientific basis for the ethical debate," said MIT Biology Professor and Whitehead member Rudolf Jaenisch, lead author on the paper, which was published in the Oct. 16 online edition of Nature. "Our work is the first proof-of-principle study to show that altered nuclear transfer not only works but is extremely efficient."

First proposed by William Hurlbut, a Stanford University professor and member of the President's Council on Bioethics, ANT has been described as an ethical alternative to somatic cell nuclear transfer (SCNT), also known as therapeutic cloning.

For SCNT, a donor nucleus, for example one taken from a skin cell, is implanted into a donor egg cell from which the nucleus had been removed. This egg cell is then tricked into thinking it has been fertilized. That causes it to grow into a blastocyst – a mass of about 100 cells – from which stem cells are removed. These embryonic stem cells can divide and replicate themselves indefinitely, and they can also form any type of tissue in the human body. However, to cull these stem cells, the blastocyst must be destroyed, which some critics insist is tantamount to destroying a human life.

The procedure theorized by Hurlbut is similar to SCNT, but with one crucial twist: Before the donor nucleus is transferred into the egg cell, its DNA is altered so that the resulting blastocyst has no chance of ever becoming a viable embryo. As a result, a "potential human being" is not destroyed once stem cells have been extracted.

Jaenisch – a firm supporter of all forms of human embryonic stem cell research – has shown that technical concerns about this approach can be overcome.

Jaenisch and Alexander Meissner, a graduate student in his lab, focused on a gene called Cdx2, which enables an embryo to grow a placenta. In order to create a blastocyst that cannot implant in a uterus, the researchers disabled Cdx2 in mouse cells.

They accomplished this with a technique called RNA interference, or RNAi. Here, short interfering RNA (siRNA) molecules are designed to target an individual gene and disrupt its ability to produce protein. In effect, the gene is shut off. Jaenisch and Meissner designed a particular form of siRNA that shut off this gene in the donor nucleus and then incorporated itself into all the cells comprising the blastocyst. As a result, all of the resulting mouse blastocysts were incapable of implantation.

However, once the stem cells had been extracted from the blastocysts, Cdx2 was still disabled in each of these new cells, something that needed to be repaired in order for these cells to be useful. To correct this, Meissner deleted the siRNA molecule by transferring a plasmid into each cell. (A plasmid is a unit of DNA that can replicate in a cell apart from the nucleus. Plasmids are usually found in bacteria, and they are a staple for recombinant DNA techniques.) The stem cells resulting from this procedure proved to be just as robust and versatile as stem cells procured in the more traditional fashion.

"The success of this procedure in no way precludes the need to pursue all forms of human embryonic stem cell research," Jaenisch said. "Human embryonic stem cells are extraordinarily complicated. If we are ever to realize their therapeutic potential, we must use all known tools and techniques in order to explore the mechanisms that give these cells such startling characteristics."

ANT, Jaenisch emphasized, is a modification, but not an alternative, to nuclear transfer, since the approach requires additional manipulations of the donor cells. He said he hopes that this modification may help resolve some of the issues surrounding work with embryonic stem cells and aid the effort to secure federal funding for such work.

This research was supported by the National Institutes of Health/National Cancer Institute.

Hire opens new chapter for LBGT community

Sarah H. Wright
News Office

Suppose they posted a support group meeting for lesbian, bisexual, gay and transgendered students and nobody came.

Abigail Francis, MIT's first program coordinator for LBGT services, resources and outreach, had that experience when she was a college sophomore, and it's one she hopes no one seeking support in the Institute community will ever encounter.

"I still remember drawing up the courage to attend that meeting. When no one showed up, I was devastated. How much easier it would have been to face the world with the resources already offered at MIT," she said.

Francis' role at MIT is a pioneering one in the academic community — there are only 193 LBGT coordinators nationwide — and her goal is to expand the Institute's current resources to "create an environment where LBGT students and faculty can have a more positive living and learning environment," she said.

Step one in her twofold strategy is to establish a microcosm of the safe and welcoming environment she envisions for the wider community. With its buttery yellow walls, funny rainbow-striped disco-mirror ball, kitchen full of snacks, comfortable upholstered couches and chairs in matching barn-red fabric, the Rainbow Lounge in Walker Memorial (W50-005) projects just that atmosphere.

Abigail Francis

Connected to the lounge are two private offices (one for Francis, one for a graduate assistant) and a smaller library/screening room. The area has phone and Internet access so students can work there easily.

Francis, who received the M.A. in social work and urban leadership from Simmons College, says the lounge is part of her intervention strategy. "I offer one-on-one support for students in need and maintain the lounge space for students to meet, find resources or just stop by for a break," she said.

The second aspect of Francis' strategy is prevention, a process that includes facilitating tolerance and diversity training programs, empowering student leadership and supporting LBGT groups.

"I help build bridges with other student organizations and departments at MIT, such as the Black Student Union, the Latino Cultural Center, the Office of Minority Education, Student Support Services and Women's Studies. I also help monitor the campus climate, as reflected in reported incidents of anti-LBGT graffiti," she said.

The recent Institute mailing — including a letter from Chancellor Philip Clay and a "You are welcome here!" postcard — offers anyone on campus an easy way to have a positive effect on the climate here, Francis said.

In addition to posting the "Welcome" cards, "Be a good ally! Take a moment to visit our website, come see the Rainbow Lounge, or, better yet, join us for one of our events. It is so important to have a faculty and staff presence at LBGT events on campus, because LBGT students are already at a loss for positive adult role models and supportive allies as mentors," Francis said. They are also at higher risk for depression and drug use, so the involvement and support of others can make a real difference in their lives, she said.

Upcoming LBGT events include:

Women's Week "True Diversity" Workshop: Exploring Race, Gender, Sexuality and Programming on Sunday, Nov. 6, 11 a.m. to 1 p.m., Room 10-105. Workshop (with brunch) is free and open to all students. RSVP to: afran@mit.edu.

The 24-Hour Multicultural Movie Marathon, Dec. 2 at 6 p.m. in Lobdell.

Queer and Faithful: LBGT@MIT is partnering with the Lutheran Episcopal Ministry to present a dinner and panel discussion. The event is free and open to all MIT affiliates.

Series examining 'Future of Water'

Sarah H. Wright
News Office

The Technology and Culture Forum at MIT is exploring the crucial global challenge of water resource management in a four-part series titled "The Future of Water."

The series will explore social, environmental and political aspects of how water is appropriated and regulated internationally and how access to drinking water and sanitation produces inequitable patterns of consumption, health and development.

On Thursday, Oct. 27, Vandana Shiva, author of "Water Wars: Privatization, Pollution, and Profit" and "Earth Democracy: Justice, Sustainability and Peace," will present a talk on "Hydro-politics and Earth Democracy," in Room 10-250 at 7 p.m.

Shiva will discuss the politics of water consumption, focusing on the victims of water scarcity and presenting the social and political landscape that frames the debate around water resources in developing countries.

On Nov. 3, Marcia Brewster, U.N. task leader on gender and water, and Shauna Currey, director of international operations and advisor at the Centre for Affordable Water & Sanitation Technology, will discuss "Women and Water" and the health, educational and economic implications of the burden on women and children of collecting water, in Room 6-120 at 7 p.m.

On Nov. 10, Susan Murcott, research engineer in civil and environmental engineering, will discuss the U.N. millennium goals for clean water and how to achieve them with current and future technologies. Murcott's talk, "Innovating for Clean and Abundant Water," will be held in Room 6-120 at 7 p.m.

"Water" began Tuesday, Oct. 25, with a world premier of "Water Please No," a documentary on the arsenic crisis in Bangladesh and Nepal.

Rob Kramer, filmmaker and co-founder of the Global Water Trust, discussed his work with Charles Harvey, associate professor of civil and environmental engineering.

"Water Please No" includes a segment on the Kanchan Arsenic Filter, an affordable water filtration system developed by MIT researchers including Murcott. The Kanchan Filter recently won a 2005 Wall Street Journal Innovation Technology Award.

This series is free and open to the public; seating is first come, first served.

For more information, please visit web.mit.edu/tac or call x3-0108.

This series is co-sponsored by the Department of Civil and Environmental Engineering, the Office of the Dean of Graduate Students, the Program in Women's Studies and MIT Sangam.

PHOTO / **DAN BERSAK**

Magic eights

MIT's men's eight crew, wearing red and black, compete in the Head of the Charles Regatta on Sunday, Oct. 23, as women's crews from other schools line up for their start.

Reif gives finance report to faculty

At the October faculty meeting, Provost L. Rafael Reif reported on the state of the Institute's finances, noting that MIT's endowment increased to $6.7 billion last year, surpassing the peak achieved in fiscal 2000.

Speaking at the Oct. 19 meeting, which was held in Room 141 in the Stata Center, the provost said that in fiscal year 2004, the value of the endowment had been $5.87 billion. The endowment value increased by 14.4 percent during fiscal 2005, up to $6.71 billion. The $842 million growth in the value of the endowment was the result of a 17.6 percent market return, combined with additional contributions from gifts and after netting out distributions to support the Institute's operations. According to a 2004 report by the National Association of College and University Business Officers, MIT's endowment is sixth among American universities, trailing Harvard, whose endowment recently surpassed the $25 billion mark, Yale, the University of Texas system, Princeton and Stanford.

"Despite our relative financial strength, the Institute uses the endowment to balance its expenses," Reif said, showing graphs of how MIT's operating budget continued to rise in recent years as its endowment took a dip. The goal, he said, is to reduce the draw on the endowment to a level that is sustainable over the long term.

The administration and faculty will have to work together to identify future academic investments and priorities, and work around such present challenges as the bleak outlook for sponsored research and the increased cost of faculty startup packages, he said.

In addition to the good news that the Institute's financial position continued to strengthen in the 2005 fiscal year, President Susan Hockfield announced that an anonymous alumnus recently pledged $25 million to endow financial aid.

"One of my very serious goals is to increase our endowments for financial aid," Hockfield said. MIT currently spends more than $50 million each year providing need-blind financial aid to its students. Of that amount, last year $34 million was provided by funds distributed from scholarship endowments. The remaining $16 million came from the Institute's General Budget. This is money that could be used for other purposes if there were sufficient endowed funds to meet MIT's financial aid commitments.

In other business, Hockfield announced that a review panel has been formed to explore why a particular case of alleged research misconduct at the Lincoln Laboratory has been so difficult to resolve. She commented that MIT's policies and procedures have, time and again, effectively dealt with such allegations.

The particular case in this instance has been more difficult to resolve, and "it is important to look at the process to determine where it has not worked well in this case," she said. The panel will "make recommendations about factors that might have complicated the resolution of the case, and how we might extract 'lessons learned' about our processes, to help avoid similar problems going forward," Hockfield said.

The panel's work will be limited to a review of procedures and will not exam-

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Page 6

MIT cancer program granted $3.2 million

Elizabeth A. Thomson
News Office

An MIT program designed to identify early signs of cancer using nanotechnologies has been named one of 12 national Cancer Nanotechnology Platform Partnerships through the National Cancer Institute.

The partnerships, announced Oct. 17, are tightly focused programs to develop the technologies to underpin new products in the war against cancer.

MIT's program, led by Associate Professor Scott Manalis of biological and mechanical engineering, will be funded with a five-year, $3.2 million grant. It will develop microfluidic devices whose nanochannels are capable of concentrating rare proteins that may serve as early signs of cancer. Together with another chip-based device, they will detect and quantify the proteins.

The initial focus of the program will be prostate cancer.

"The timing for this award couldn't be better because we are ready to go with our technology. We are ready to solve the hard problems that remain for us to create a clinically useful fluidics device that will impact medicine in a real way," said Manalis.

The Cancer Nanotechnology Platform Partnerships are part of a $144.3 million, five-year NCI initiative for nanotechnology in cancer research. Earlier this month the NCI announced that MIT and Harvard will receive a five-year, $20 million grant to form the MIT-Harvard Center of Cancer Nanotechnology Excellence.

The center is one of seven multi-institutional hubs across the nation that will integrate nanotechnology across the cancer research continuum and provide new solutions for the diagnosis and treatment of cancer. It will be led by Institute Professor Robert Langer and Professor Ralph Weissleder, M.D., of Harvard Medical School and Massachusetts General Hospital.

FACULTY

Continued from Page 5

ine the specific allegations in the case. Hockfield further said that, in addition to the review panel, resolving the manner in which an investigation of the allegations in the case will be conducted is being pursued at a very high level with the U.S. Department of Defense (DOD).

Associate Provost Claude Canizares will chair the panel. The charge to the panel is to (i) identify the factors that have complicated and delayed the satisfactory resolution of this particular allegation of research misconduct, (ii) determine their implications, if any, for how the Institute should conduct itself in the future, and (iii) recommend any changes in policy and/or practice that would help avoid a recurrence.

The panel has been requested to present its findings by the middle of January. In addition to Canizares, panel members are Institute Professor Mildred Dresselhaus; physics Professor David Litster, former vice president for research; and Dr. Gerald Dinneen. Dinnen was director of Lincoln Laboratory from 1970-77 and was a professor of electrical engineering at MIT from 1971-1981. He has held senior positions in industry, the DOD and the National Academy of Engineering.

The faculty also heard a report on planned changes to the Institute's disciplinary system.

Chair of the Faculty Lorna Gibson, Matoula S. Salapatas Professor of Materials Science and Engineering, chaired a committee that reviewed MIT's disciplinary procedures for fairness and consistency.

Currently, cases of alleged misconduct filed with the Office of Student Conflict Resolution and Discipline (OSCRD) are sometimes pursued through Dean's panels and sometimes through the Committee on Discipline (COD).

Gibson said the committee recommends a "single pathway" that funnels all cases through the COD. The chair would decide if an alleged infraction should be handled by a full COD hearing, a smaller COD panel or, in cases where the student admits culpability, an administrative review.

In addition, complainants and respondents appearing before the COD would, upon request, be provided with outside faculty or senior staff advisors who would help them investigate and present their case.

Another significant change recommended is that appeals of COD decisions involving suspension, expulsion or revoking a degree should be made to the chancellor, rather than to the president. The chancellor would decide whether to hear an appeal, and his decision would be final. The committee found that at Brown, Harvard, Princeton, Stanford and Yale, the president does not handle appeals. "The chancellor is the person who oversees the lives and education of students and is better informed about issues that may come to bear on them," Hockfield said.

The proposed change in the appeal process will be put to a vote at the November faculty meeting.

Following the formal business of the meeting, there was opportunity for faculty to informally raise issues or ask questions of the president, provost and chancellor.

PHOTO / **DONNA COVENEY**

Storm brooding

Fierce winds and lashing rains seem to have whipped up a little resentment judging by the body language of these two, who were watching the wild weather from the entrance to 77 Mass. Ave. on Tuesday, Oct. 25.

NEWS YOU CAN USE

IAP travel fellowships

The Kelly-Douglas Fund, which offers traveling fellowships to undergraduates, is accepting applications for its fall term competition. The competition is open to all juniors and seniors whose Independent Activities Period plans include a research project that requires travel. The maximum award is $1,000.

The deadline for applications is Wednesday, Nov. 16. An application must include two letters: (1) the applicant's description of his or her goals and their relation to a field in the School of Humanities, Arts and Social Sciences (SHASS) or to a humanitarian project, including a clear estimate of the cost of transportation, lodging and other expenses; and (2) an evaluation of the applicant's goals and project by an MIT instructor.

These letters should be sent to Kristin Blank, administrative assistant in music and theater arts, Room 4-246. Questions may be addressed to Professor Lowell Lindgren, lindgren@mit.edu, director of the Kelly-Douglas Fund. For further information, visit web.mit.edu/mta/www/music/resources/kellytraveling.html.

OBITUARIES

DANIEL H. HAMILTON JR.

Daniel H. Hamilton Jr., who helped build the nation's first air attack warning system in the Arctic in the 1950s, died June 8 in Hyannis. He was 87.

Hamilton, who joined MIT's Lincoln Laboratory upon its formation, helped design a chain of 63 radar and communications systems stretching 3,000 miles from the northwest coast of Alaska to the eastern shore of Baffin Island during the 1950s. He was also a World War II veteran.

Hamilton retired from Lincoln Laboratory in 1984.

He is survived by his wife, Jane (Evans) Hamilton of Charleston, S.C.; two sons, Daniel Heyward Hamilton III of Harwich and Thomas Heyward Motte Hamilton of Charleston, S.C.; two daughters, Margot Hamilton of Orlando, Fla. and Ann Hollister Hamilton Moore of Richmond, Va.; five grandchildren and four great-grandchildren.

DOROTHY GIDDINGS STAKNIS

Dorothy Giddings Staknis, retired liaison editor for the MIT registrar's office, died Oct. 1 in Great Barrington, R.I. She was 86.

Staknis worked in the registrar's office for 15 years and also taught at MIT for three years.

The wife of the late Victor Staknis, she is survived by a brother, Edwin S. Giddings of Las Vegas and of Charleston, Ore.; a sister, Maryanna Macy of Great Barrington, R.I.; and several nieces, nephews, great-nieces and great-nephews.

MEMORIAL SERVICE

A memorial service for Nathan H. Cook, MIT professor emeritus of mechanical engineering and former MacGregor housemaster, will be held today at 1:30 p.m. in the MIT Chapel. Cook died July 13. For his full obituary, visit web.mit.edu/newsoffice/2005/obit-cook.html.

Apply now for Siegel Prize

Submissions are now being accepted for the Benjamin Siegel Prize, a $2,500 prize offered to the MIT student who submits the best written work on issues in science, technology and society. The prize is open to undergraduate and graduate students from any MIT school or department. Students should submit one hard copy of a single-authored work that is no more than 50 pages long and was written within the last two academic years. Submit entries to the Siegel Prize Committee, Program in Science, Technology and Society, E51-185, by Nov. 15. For more information, e-mail stsprogram@mit.edu, call x3-3452, or visit web.mit.edu/sts.

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

Maple rolltop desk w/ matching chair $350. Round kitchen table $50, 4wrought iron chairs $80. Call (781) 861-9472.

Artwork by Raoul Dufy. Professionally framed & matted prints: "La vie en rose" (12" x 16"), $15; oceanside scene in blues & purples (22" x 28"), $25. Contact cavril@mit.edu or 253-9411.

KSM150 ARTISAN series stand mixer, 5-quart capacity, tilt-head mixer, w/ accessories. Brand new. $150. Image available via e-mail. Contact Bart at (781) 981-2994 or cardon@ll.mit.edu.

Antique Columbia phonograph. Tabletop model, mahogany case, works. $90. E-mail sarnold@mit.edu.

Bicycle, made by Jetter, Reactor & Manufacturing. Double hand breaks, adjustable reflectors. Lug frame, high ten tubing. Asking $30. Quick sale. Hurry won't last. Call (781) 893-3377 or e-mail k1cei@comcast.net.

HOUSING

Charlestown. Sunny 1BR/1BA condo in rowhouse. Hrdwd flrs, crown molding, basement storage & laundry, roofdeck. Low condo fee. Close to I-93, Storrow Drive and T. $315,000. Call Jonathan at (617) 276-4629.

Medford apartment, 6 rooms, 3BR, second floor of 2-family. Newly renovated. $1,900 plus util. Washer/dryer. Near Tufts, Davis and Medford Squares. Avail. now. First & last months' rent. Call Tom at (617) 605-6630.

VEHICLES

1991 Buick Roadmaster wagon. Well maintained, Michelin tires. Low mileage. Automatic, power windows & locks, sunroof. Great student or family car. Asking $2000/bst. Contact Nancy Taylor at 253-9440 or nstaylor@mit.edu.

STUDENT EMPLOYMENT

Positions for students with work study eligibility

Directed project work at Asian Community Development Corp., in one of four program areas: urban/community planning, economic development, physical development & community organizing. Students who make a one-year commitment can develop & implement their own program, w/ needs of the community in mind. Must have interest in learning more about the Asian Community in Boston. Students who speak Cantonese, Toisanese, and Mandarin highly encouraged to apply. 10 hrs/wk. $8-$10/hr. Contact Daniel Stolkowski (617) 482-2380 x206, daniel@asiancdc.org.

Like to work w/ teens? Want an easy, fun way to make a few dollars? Hang out w/ teens at the Common Ground Teen Center. Center has pool table, air hockey, ping pong, foosball, big screen TV, computers & places to just hang out. Need two students to help chaperone the center on Wednesdays from 2:30-5 p.m. $18/hr. Contact Jocelyn Dautel (781) 324-7680 x219, jdautel@gmail.com.

MIT fetes New Orleans with 'Bayou Bash'

Fall Festival concert planned to benefit victims of hurricane

Paul Crocetti
Office of the Arts

MIT's annual Fall Festival will take on a different flavor this year. Titled "Bayou Bash," the weekend will culminate in a benefit concert for the victims of Hurricane Katrina on Sunday, Oct. 30, in Kresge Auditorium. The event will feature numerous acts from the New Orleans area, including blues and gospel singer Marva Wright, alto saxophonist Donald Harrison and special guests the Wild Magnolias, a group of "Mardi Gras Indians."

Known for elaborate costumes designed to resemble Native American dress, the Wild Magnolias are actually, according to their web site, "black working-class groups that are part secret and spiritual society and part neighborhood social club."

During Mardi Gras, the group parades in costume while chanting, singing and playing percussion. Folk, funk and jazz are some of the many different styles that make up the Magnolias' sound.

While the group was able to escape New Orleans before Hurricane Katrina hit, its members lost nearly everything in the flooding.

"They were able to save their current suits," said Barbara Louviere, a residential scholar at Simmons Hall. Louviere, a New Orleans jazz expert who spearheaded the Bayou Bash weekend, has connections with many musicians from the hurricane-ravaged city. "But the old costumes from previous years were lost. They live in the Ninth Ward. I don't know of one who didn't lose his home and everything in it."

Many musicians, including pianist Davell Crawford, who will perform at Sunday's concert, lost equipment and instruments.

"Crawford is the musical director at a church," said Louviere. "Someone from the church called him and said he saw his piano floating down the street."

This concert will help these New Orleans musicians not only financially but also psychologically, Louviere said.

PHOTO COURTESY/ **WILD MAGNOLIAS**

The Wild Magnolias, a New Orleans-based musical group that chants, sings and plays percussion, will perform at MIT's annual Fall Festival on Sunday, Oct. 30, in Kresge Auditorium.

"They're looking forward to this," she said. "It's really important to them. It's really emotional for them. It's an effort to give them work."

The big event to end the Fall Festival, which runs from Oct. 28 to 30, was originally planned to be a comedy show, said Thomas Robinson, assistant director of student activities. Past performers include Margaret Cho and Lewis Black.

"We were going to bring in some comedians from 'The Daily Show,' but after the hurricane hit, we were contacted by Barbara and thought, let's make more of a difference," Robinson said.

Proceeds from Sunday's concert will go to the performers and other charities, including the Pass Christian High School in Mississippi, Robinson said. The school was heavily damaged in the storm and asked for money to support its music program, he said. The fund-raising goal for the event is between $6,000 and $8,000.

"The whole effort is to help the culture and show the culture by bringing it to MIT," he said.

The "Bayou Bash" weekend will feature numerous other events, including other tributes to the New Orleans music scene. On Friday, Oct. 28, there will be a parade through the MIT campus that ends with a jazz concert in the Stata Amphitheater featuring the Wild Magnolias and the Stooges Brass Band. On Saturday in the Kresge Pit, there will be a barbecue and concert featuring the Christian Scott Sextet and junior chemical engineering major and saxophonist Louis Fouche, who was forced to evacuate his home in New Orleans.

PHOTO / **CHRIS FRAZER SMITH**

Members of the Endellion String Quartet enjoy fish and chips. They will perform a Mozart quintet at MIT this Friday with Professor Marcus Thompson.

Thompson, quartet to celebrate Mozart

The Endellion Quartet makes its third appearance at MIT this Friday, Oct. 28, at 8 p.m. in Kresge Auditorium, this time with internationally acclaimed violist Marcus Thompson, the Robert R. Taylor Professor of Music at MIT. Thompson will perform Mozart's Viola Quintet in G Minor with the acclaimed British ensemble, which is now in its 25th year.

The concert is the second in a series scheduled for this year and next in which Thompson will perform all six viola quintets composed by Mozart with visiting string quartets. The concerts are being held in commemoration of the 250th anniversary of Mozart's birth.

Friday's program also includes Sir Michael Tippett's Quartet No. 2 and Haydn's Quartet Op. 20, No. 2.

For more information, call x3-2826.

Cuban architecture on view

Revolution brought a new social order to Cuba and with it a new way of looking at buildings.

Following the overthrow of Fulgencio Batista's regime in January 1959, the new Cuban government, led by Fidel Castro, launched an ambitious national building program designed to support the socialist agenda of the new regime.

The results can be seen in "Architecture and Revolution in Cuba: 1959-1969," an exhibition of digitally restored period photographs and drawings focusing on these state building projects, on view at the Wolk Gallery (Room 7-338) through Dec. 22.

Cuba's building campaign during the 1960s was part of a national effort to reapportion resources across a traditionally stratified society. Focusing on the construction of housing, educational facilities and public works, new federal agencies were created to translate the revolutionary mission into the built environment.

The task fell to a younger generation of architects, since many of the more established architects had gone into exile following the revolution. This new generation of architects including such figures as Ricardo Porro, Mario Girona, Walter Betancourt, Hugo D'Acosta and Mercedes Álvarez, experimented with forms and materials to extend the tradition of modernism beyond the prerevolutionary domain of private development and the single-family house.

"Many of the designs for schools, hospitals, office blocks and other structures expanded a modernist vocabulary with new forms and materials and still appear amazingly fresh to us today, like a circular housing complex or a pinwheel plan for the National Ice Cream Parlor in Havana," said Gary van Zante, MIT Museum's curator of architecture and design.

Architecture and Revolution was curated by Eduardo Luis Rodríguez, a practicing architect, critic and historian who was born in Havana, and organized by the Storefront for Art and Architecture, New York. The Wolk is open weekdays from 9 a.m. to 5 p.m. For more information, call x8-9106 or visit web.mit.edu/sap/www/wolk.

PHOTO COURTESY / **STOREFRONT FOR ART AND ARCHITECTURE/COLLECTION OF EDUARDO LUIS RODRÍGUEZ**

Coppelia Ice Cream Parlour in Havana, designed by Mario Girona in the mid-1960s.

ARTS NEWS

Office of the Arts listservs

The Office of the Arts at MIT now has two e-mail listservs for information about upcoming MIT arts events and activities, Arts-announce and OA-announce. Both are available, by subscription, to the MIT community and the public:

Arts-announce

Receive general announcements related to the arts at MIT, including selected event listings, special announcements, audition announcements, and ticket offers. Subscribers may send announcements to this list. Subscribe to Arts-announce by e-mailing arts-announce-request@media.mit.edu with "Subscribe" as the subject.

OA-announce

Receive announcements of events and deadlines for programs sponsored by the MIT Office of the Arts (OA), including visiting artist events, Council for the Arts Grants deadlines, and announcements and deadlines related to OA Student Programs. Subscribers will receive, but may not send, announcements to this list. Subscribe to OA-announce by e-mailing oa-announce-request@media.mit.edu with "Subscribe" as the subject.

For information on these and other mailing lists and listservs overseen by the Office of the Arts at MIT, go to the arts@MIT home page (web.mit.edu/arts) and click on the Mailing List link in the footer.

MIT EVENT HIGHLIGHTS OCTOBER 26–30

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

PHOTO COURTESY / **WWW.TRITONBRASS.ORG/INDEX.HTML**

Bold and brassy

The Triton Brass Quintet will perform at the MIT Chapel on Thursday, Oct. 27, at noon. The concert is free and open to the public.

WEDNESDAY October 26

"Close-Up (Nama-ye Nazdik)" Film presented in conjunction with "Christian Jankowski: Everything Fell Together." All day. Bartos Theater. 253-4680.

Object Lesson: "RoboTuna II" Gallery talk by Kurt Hasselbach, curator, Hart Nautical Collection. Noon. MIT Museum. 253-4444.

Gallery Talk Bill Arning, curator of the List Visual Arts Center, speaks on the exhibition "Christian Jankowski: Everything Fell Together." 12:30 p.m. List Visual Arts Center (E15). 253-4680.

Israeli Dancing 8–11 p.m. Lobby 13. 484-3267.

THURSDAY October 27

MIT Chapel Concert Triton Brass Quintet. Noon. MIT Chapel. 253-2826.

"Adjusting to life in the US" A welcome reception for new international scholars at MIT with a presentation by Anne Copeland of the Interchange Institute. 4–6 p.m. Room W20-306. 253-2851.

"Close-Up (Nama-ye Nazdik)" List Visual Arts Center Film Night, presented in conjunction with "Christian Jankowski: Everything Fell Together." 7 p.m. Bartos Theater. 253-4680.

FRIDAY October 28

"Finding Form: The Art of Richard Filipowski" Exhibit by Filipowski, an internationally acclaimed sculptor. Opening reception 4-6 p.m. MIT Museum. 253-4444.

"Do You Remember Dolly Bell? (Sjecas li se Dolly Bell?)" Film from Yugoslavia, 1981. Directed by Emir Kusturica. 6 p.m. Room 3-133.

Gallery Talk Talk by Nicholas Baume. 6 p.m. List Visual Arts Center (E15). 253-4680.

Endellion String Quartet Mozart's Viola Quintet with Marcus Thompson, viola. 8 p.m. Kresge Auditorium. 253-2826.

SATURDAY October 29

"Four Tables: Projects by Lira Nikolovska" Exhibit of works by Nikolovska, a Ph.D. candidate at the Design and Computation program at the School of Architecture. Room 7-238. All day.

AKPIA Workshop: "The Mamluk Domes of Cairo" Architecture workshop. 10 a.m.-5 p.m. Room 5-216. 253-1400.

Bayou Bash BBQ Jazz Lunch Jazz music during the Bayou Bash BBQ. 1–3 p.m. Kresge BBQ area. 253-6777.

"The Amityville Horror" (1979) LSC Fall 2005 Classic Film Series. $3. 7 p.m. Room 26-100. 253-3791.

SUNDAY October 30

Varsity Sailing - Erwin Schell Trophy 9 a.m. Charles River. 258-5265.

Brunch Sunday morning brunch. 11 a.m.–1 p.m. Green Hall. 642-8272.

Annual Halloween Potluck Party Halloween party and potluck dinner with pumpkin carving and games for children. Costumes are encouraged. 6–8 p.m. Room 10-105. 253-1614.

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

"MACBETH" — *Oct. 27*
Shakespeare Ensemble fall production. $8, $6 students. Oct. 27-29 and Nov. 3-5.
Kresge Little Theater
8 p.m.

HALLOWMIT — *Oct. 30*
Halloween party for the entire MIT community, with parade, face painters, jugglers, clowns, candy, crafts and fun.
Student Center Lobby
3:30-5:30 p.m.

FALL FESTIVAL BAYOU BASH — *Oct. 30*
Concert to support New Orleans musicans and Gulf Coast charities. $5 MIT students, $10 MIT staff, $15 faculty and all others.
Kresge Auditorium
7-10:30 p.m.

MIT EVENT HIGHLIGHTS OCTOBER 31–NOVEMBER 6

MONDAY October 31

Halloween Costumes, Candy and Scares, oh my!

"What Does Current Scientific Research Have to Say About the Present and Future Risks Associated with Hurricanes?" The fourth installment of the "Big Questions after Big Hurricanes" symposium, talk by Professor Kerry Emanuel. Noon. Bartos Theatre.

Biology Colloquium Talk by Ihor Lemischka of Princeton University. 4–5 p.m. Room 32-123.

Trivia Night at the Thirsty Ear Hosted by Tim Graves. Must be over 21. ID required. 9–11:30 p.m. The Thirsty Ear Pub.

TUESDAY November 1

"iSPOTS: Living and Working in MIT's Wireless Campus" The installation, produced by MIT's SENSEable City Lab, documents the wireless campus in real time using log information from MIT's wireless network. $5 adults, $2 students. Free with MIT ID. 10 a.m.-5 p.m. MIT Museum. 253-4444.

Architecture Lecture "Luyeyuan Sculpture Museum" lecture by Jiakun Liu, China. 6:30 p.m. Room 10-250. 253-7791.

Chicks Make Flicks: Gayle Ferraro with "Anonymously Yours" Discussion follows screening of the film chronicling the merchandising of women in Southeastern Asia. 7 p.m. Room 6-120. 253-8844.

WEDNESDAY November 2

Terrorism Talk by Jessica Stern of the Kennedy School of Government. Noon. Room E38-615. 253-7529.

"Listen to the People: The Neo-Griot New Orleans Project" Talk by New Orleans poet, filmmaker and critic Kalamu ya Salaam. 7 p.m. Room 4-163. 253-7894.

"Emerging Muslim Identities in Diasporic Communities" Film: "A Fond Kiss" (Ken Loach, UK, 2004). 7 p.m. Room 2-105. 253-4771.

Israeli Dancing 8–11 p.m. Lobby 13. 484-3267.

THURSDAY November 3

MIT Chapel Concert Alan Jabbour, Appalachian folklorist and fiddler. Noon. MIT Chapel. 253-2826.

"Now Playing: Photographs by Joe Seaward" Reception. 6 p.m. Wiesner Student Art Gallery. 253-7019.

Writer's Series: Jonathan Lethem Talk by Lethem, author of many books including "Motherless Brooklyn," which won the National Book Critics Circle Award for Fiction. 7 p.m. Room 10-250. 253-7894.

American Folk Fiddle Workshop Alan Jabbour, American folk fiddler. 7:30 p.m. Killian Hall. 258-5629.

FRIDAY November 4

"Now Playing: Photographs by Joe Seaward" Exhibit through Nov. 30. 24 hours a day. Wiesner Student Art Gallery. 253-7019.

McGovern Institute Opening & Dedication Opening and Dedication of the McGovern Institute for Brain Research with speeches by Eric Kandel, Robert Metcalfe and Jane Pauley. 10 a.m.–2 p.m. Room 46-3201. 452-2507.

"Urga: Close to Eden (Urga: Territoriya Lubvi)" Part of the Suburbia Goes Global film series. 6 p.m. Room 3-133.

Gallery Talk Bill Arning, curator of the List Visual Arts Center, speaks on the List exhibition "Christian Jankowski: Everything Fell Together." 6 p.m. List Visual Arts Center (E15). 253-4680.

SATURDAY November 5

Diwali Puja Celebration of Diwali, the festival of lights. 6–7 p.m. MIT Chapel. 225-8814.

"Star Wars Episode III: Revenge of the Sith" LSC movie. $3. 7 and 10 p.m. showings. Room 26-100. 253-3791.

Smashing the Ceiling Concert featuring Magdalen Hsu-Li. Raquel Evita Sidel, a local slam poet, will be opening. $5 student, $10 non-student. 8–10 p.m. Room 10-250. 253-5440.

SUNDAY November 6

True Diversity Diversity workshop with talk by Magdalen Hsu-Li. RSVP required. 11 a.m.–1:30 p.m. Room 10-105. 253-5440.

Gallery Talk Talk by Jane Farver in conjunction with "Christian Jankowski: Everything Fell Together." 2 p.m. List Visual Arts Center (E15). 253-4680.

Intercollegiate Benefit Concert for Katrina and Earthquake Victims Performers from MIT, Harvard, Wellesley, Berklee, and Brandeis. All proceeds go to Hurricane Katrina and Pakistan earthquake relief. $5 minimum donation. 3–5 p.m. Walker Memorial.