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TechTalk

SERVING THE MIT COMMUNITY

MIT chosen for nat'l role fighting cancer

The National Cancer Institute today announced it has chosen MIT and Harvard University to share one of seven national, multi-institutional hubs it is establishing to rapidly advance the application of nanotechnologies to cancer research.

The MIT-Harvard Center of Cancer Nanotechnology Excellence will be funded with a five-year, $20 million grant organized and administered by MIT's Center for Cancer Research (CCR). Principal Investigators are MIT Institute Professor Robert Langer and Professor Ralph Weissleder, M.D., of Harvard Medical School and Massachusetts General Hospital.

"This is a great opportunity for MIT to pursue interdisciplinary science at the intersection of cancer research and nanotechnology, and hopefully to do some real good for patients," said Langer.

According to the NCI, the Centers of Cancer Nanotechnology Excellence, or CCNEs, were created to provide new solutions to the cancer problem. Nanotechnology, the development and engineering of devices so small that they are measured on a molecular scale, has demonstrated promising results in cancer research and treatment.

The MIT-Harvard CCNE brings together a team of more than a dozen experts across a variety of disciplines — chemistry, engineering, biology and medicine. At MIT they include Langer, Institute Professor Phillip Sharp (biology), and Professors Tyler Jacks (biology, head of the CCR), Michael Cima (materials science), Angela Belcher (bioengineering), David Housman (Biology), Moungi Bawendi (chemistry) and Sangeeta Bhatia (Harvard-MIT Division of Health Sciences and Technology).

The investigators will pursue five innovative cancer research projects spanning the entire spectrum of nanotechnology applications, from fabricating nanoparticles for targeted delivery of therapeutic drugs and imaging agents to implanting tiny sensors for early detection and cancer monitoring. In addition, other MIT researchers will be involved in smaller pilot projects.

One of the large projects, led by Langer and his former postdoctoral fellow Omid Farokhzad, now a Harvard Medical School professor, focuses on using nanoparticles to transport time-release anti-cancer drugs directly to prostate cancer cells. "One of the problems with cancer therapy is that it goes everywhere in the body," often caus-

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PHOTO / **DONNA COVENEY**

A can-do attitude

MiHae Chang, a junior in architecture, puts the finishing touches on the can doorway of her team's portable homeless shelter. Working in teams of four or five, students had five days to design and build the individual shelters for Professor Jan Wampler's architecture class. **Story, additional photos on Page 4.**

Author expects avian flu pandemic

World is unprepared, Laurie Garrett says

Sarah H. Wright
News Office

The catastrophic potential of an avian flu pandemic ranks just below that for thermonuclear war, and our global lack of preparedness for just one wave of this fierce virus promises death to millions, a Pulitzer Prize-winning author warned at a talk held on Monday, Sept. 26, at 3 p.m. at the Dibner Institute.

Laurie Garrett, senior fellow for global health at the Council on Foreign Relations, delivered her talk, "The Scientific, Health and Political Implications of an Avian Flu Pandemic," to a rapt audience.

A former science reporter for National Public Radio and for New York Newsday, Garrett won the Pulitzer Prize and the Polk and Peabody awards for her writing on global health systems and infectious diseases. She is the author of "The Coming Plague: Newly Emerging Diseases in a World Out of Balance" and "Betrayal of Trust: The Collapse of Global Public Health."

Garrett described the avian flu virus, known to scientists as H5N1, in all its pernicious power. She traced its roots to Guandong, China, "stewpot of Asia" and birthplace of SARS, where live animal markets and human and animal migration confound surveillance, record-keeping and disease containment.

H5N1 originated in migrating aquatic

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MIT launches effort to understand autism

Deborah Halber
News Office Correspondent

MIT brain researchers are undertaking an ambitious, multifaceted approach to understanding the genetic, molecular and behavioral aspects of autism, with the help of a $7.5 million grant from the New York-based Simons Foundation founded by James and Marilyn Simons.

Autism, which affects as many as 1.5 million people, is considered the fastest growing developmental disability in America. Typically appearing during the first three years of life, autism is characterized by impairment in social interaction and communication abilities and by repetitive behaviors. Services for autistic adults cost $90 billion a year. Early diagnosis and intervention can cut the cost of lifelong care by two-thirds.

Studies indicate that the disorder may involve multiple genes. "A major step toward a mechanistic understanding of autism will be to establish the function of the candidate genes and molecules," said program director Mriganka Sur, head of the Department of Brain and Cognitive Sciences at MIT and Sherman Fairchild Professor of Neuroscience. "Because autism's symptoms involve many different dimensions of brain function — social, cognitive, visual, motor, language — a full understanding involves an analysis of the range of dysfunctions and their probable causes.

"The projects funded by the Simons Foundation grant involve MIT researchers who are expert in diverse areas, including human brain imaging, visual psychophysics, brain development, neuronal plasticity, cortical physiology and mouse genetics. This is a novel and unique combination of strengths to be brought to bear on a single

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Faculty ship books to Baghdad

Scott Campbell
School of Architecture and Planning

The faculty of MIT's Department of Urban Studies and Planning recently shipped 300 pounds of books to the Institute of Urban and Regional Planning at the University of Baghdad in an effort to help replenish its devastated library.

Roughly 200 books and journals were sent, covering economic development, environmental protection, infrastructure planning, remote sensing, landscape architecture and geography. Some books were even historical urban planning books focused on the infrastructure of Middle Eastern cities, including Baghdad and other historically significant areas of Iraq that have been destroyed by the war.

The gift came about because of an MIT visit last spring by Abdelwehab Ahmed, head of the environmental planning department at the University of Baghdad. Ahmed hadn't been out of Iraq for 17 years, since the rise of Saddam Hussein, nor had he had contact in all that time with the wider planning community. Faced now with the challenge, along with his colleagues, of rebuilding Baghdad, he spent a semester here taking full advantage of all the opportunities MIT afforded.

When he went home at the end of the term, faculty members combed through their private libraries to put together a gift to send after him. They collected nearly twice as many books as they shipped; because Iraq is a war zone only Priority Mail is delivered, and for a shipment of 300 pounds that amounted to a significant cost. The remaining books will be shipped when mailing restrictions are lifted.

Initiated by Larry Susskind, Ford Professor of Urban and Environmental Planning — who also helped arrange Ahmed's visit — the gift was one of many such shipments from around the world, as university colleagues try to help rebuild Iraq's libraries. There are 22 universities and 42 technical colleges in Iraq, all of which have faced decline over the last 20 years. And in the looting and fires that occurred during and after the fall of Hussein, many classrooms, libraries, buildings and laboratories were burned, while computers, furniture, fans, windows, doors — everything of value — were taken or destroyed.

Hockfield will take place in Academy of Arts, Sciences

President Susan Hockfield will be inducted into the American Academy of Arts and Sciences on Saturday, Oct. 8, at the academy's headquarters in Cambridge, Mass.

Fellows are selected through a highly competitive process that recognizes individuals who have made pre-eminent contributions to their disciplines and to society at large. They are nominated and elected to the academy by current members.

Hockfield is a member of the 2004 class of fellows, but was unable to attend last year's induction ceremony, so she will be formally inducted with the 2005 class.

MIT fellows in the 2005 class are Professor Edward DeLong of civil and environmental engineering; Professor John Guttag of electrical engineering and computer science; Professor Daniel Nocera of chemistry, who is also the W. M. Keck Professor of Energy; Harriet Ritvo, the Arthur J. Conner Professor of History and Writing; and Richard Samuels, the Ford Foundation International Professor of Political Science.

Speaker proposals sought

The Commencement Committee invites suggestions for the guest speaker at MIT's Commencement exercises on Friday, June 9, from all members of the community. The Commencement speaker should be one who will be able to address topics of relevance to MIT.

Suggestions may be submitted to Kimberley Wu, president of the Class of 2006 (kim_wu@mit.edu); Emilie Slaby, president of the Graduate Student Council (slaby@mit.edu); Gayle Gallagher, executive officer for Commencement (gayle@mit.edu); and Eric Grimson, chairman of the Commencement Committee (welg@csail.mit.edu).

Suggestions must be received by Friday, Oct. 7.

Following a review, the committee will submit a list to President Susan Hockfield for consideration. The list will not be made public. The president has the responsibility and authority for selecting and inviting a guest speaker for the Commencement exercises.

PHOTO COURTESY / **MIT MEDIA LAB**

Gov. Mitt Romney wants Massachusetts schoolchildren to get the $100 hand-crank laptops developed at the MIT Media Lab. The above image shows the laptop design.

$100 laptop idea taking off

Anne Trafton
News Office

An MIT professor's plan to offer $100, hand-crank laptop computers to children in developing countries has drawn interest from several foreign leaders as well as Massachusetts Gov. Mitt Romney, who plans to distribute them to schoolchildren.

Nicholas Negroponte, co-founder and chairman of the Media Lab, has been working on the laptop idea since 1999 and plans to have a working prototype ready in November. He demonstrated a model last week at the Technology Review Magazine Emerging Technologies Conference at MIT.

In January, Negroponte and his Media Lab colleagues Joe Jacobson and Seymour Papert announced the foundation of One Laptop Per Child, a nonprofit dedicated to designing and distributing the computers. According to the project's web site, leaders in Thailand, Brazil and Egypt have already expressed interest in the computers, which can be powered by electrical outlets or by hand crank.

"Laptops are both a window and a tool: a window into the world and a tool with which to think. They are a wonderful way for all children to 'learn learning' through independent interaction and exploration," Negroponte wrote on the web site.

Much of the cost savings comes from lowering the cost of the display down to about $30. The designers also streamlined the computers' software. But the Linux-based, full-color, full-screen laptops can do anything a regular laptop can do except store huge amounts of data, according to Negroponte.

The computers will also have wireless Internet access, but only if they are within range of an Internet base station.

Although the program is targeted to developing nations, Romney said he thought Massachusetts children could also benefit. Two weeks ago, he announced a plan to spend $54 million to roll out the program over two years, starting in fall 2007.

Several companies are helping to develop the laptop, including AMD, Brightstar, Google, News Corp and Red Hat, the web site said. The laptops will not be available for the general public to purchase.

For more information about the project, visit laptop.media.mit.edu.

NEWS YOU CAN USE

Grad life grants

The Graduate Students Office is seeking proposals for Graduate Student Life Grants. Grants will be awarded for creative ideas for enhancing the graduate student experience. The deadline for proposals is Oct. 14. For more information, visit web.mit.edu/gso/community/grants.html.

Housing relocates

The housing office is moving from its present location in E32 to E19-429 on Oct. 6. E32 is being completely vacated over the fall term, and the building is slated to be demolished.

Housing covers many areas, including undergraduate, conference and guest housing; graduate and family housing; off-campus housing; and maintenance and renovations for residential facilities.

To accommodate the move, the housing office will be closed on Thursday, Oct. 6, and Friday, Oct. 7, but staffers will check voicemail during that time. If anyone has an emergency requiring immediate attention, please call x3-1500 and an appropriate housing employee will be located.

For more information, please contact Linda Patton in E32-216 or x3-4449.

Draper Tech Expo

MIT faculty and students are invited to visit Draper Lab's Technology Exposition to see Draper projects and technologies and discuss them with staff members. The event will be open to students and faculty on Wednesday, Oct. 5, from 12:30 to 4 p.m. and Thursday, Oct. 6, from 9 a.m. to 1 p.m.

Exhibit topics will include space systems, robotics, biomedical engineering and a variety of independent research and development projects.

Visitors must present photo identification. For more information, contact the Communications Office at x8-2600.

IAP 2006

Members of the MIT community planning to offer activities and credit subjects during the 2006 Independent Activities Period (IAP) may now begin submitting descriptions online. Listings will appear in the online IAP Guide at web.mit.edu/iap. Organizers are encouraged to post activity and subject descriptions by the first week of November. To post a listing, visit web.mit.edu/iap. An MIT personal certificate is required. Questions about IAP should be directed to the Academic Resource Center at x3-1668 or iap-www@mit.edu.

MIT Excellence Awards

Team and individual nominations for the fifth annual MIT Excellence Awards are being accepted online at web.mit.edu/hr/rewards/excellence/. These awards recognize outstanding accomplishments by support, service, sponsored research, administrative and other academic staff. Brown bag lunch discussions are being offered for those who have questions about the nomination process or would like help with the nomination form. RSVP at rewards@mit.edu for any of the following sessions: Oct. 4 from noon to 1 p.m. in S2-180 (Lincoln Lab); Oct. 12 from 12:30 to 1:30 p.m. in 16-151; Oct. 17 from noon to 1:30 p.m. in 14N-132 (this session takes place in a computer lab. Participants will be able to work on their nominations during the workshop). Nominations are due Oct. 19. For more information, contact Kande Culver, at x3-5986 or rewards@mit.edu.

No Tech Talk next week

There will be no Tech Talk on Oct. 12 because of the Columbus Day holiday. The next paper will appear Oct. 19.

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PHOTO / DONNA COVENEY

Pulitzer Prize-winning author Laurie Garrett discussed the mounting threat of an avian flu pandemic in her talk at the Dibner Institute on Monday, Sept. 26.

FLU

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birds whose normal flyways traverse China. The virus occurred in chickens as the forces of increased prosperity — more demand for chicken and more chicken farms — reduced habitat along the migratory flyways, landing infected birds among their vulnerable domestic cousins. H5N1 is 100 percent lethal to chickens.

To date, more than 300 million chickens have been culled or killed in an attempt to contain the virus. Meanwhile, human-to-human transmission has been confirmed in Thailand and Vietnam, where it has been 55 percent lethal, so far.

H5N1 is particularly, swiftly lethal to healthy humans under the age of 35, Garrett noted, for the same reasons the young were most vulnerable to the pandemic virus of 1918: they lack the antibody protection afforded to older humans who have survived earlier viral attacks.

A mordant wit, Garrett remarked to those present, "Students, you are in the target age group!"

In addition, she said, "The human immune system finds this virus so deeply foreign that it goes all out in its response. There's tremendous collateral damage."

Garrett also warned that medicine to manage any avian flu damage barely exists. Only nine countries in the world have the capacity to produce vaccine, and surely the wealthy nations will serve their own people first.

Currently, the only factory producing Tamiflu, a medicine that mitigates flu symptoms, is in Switzerland. Garrett, a woman whom one can easily imagine out on the tarmac, warned that unions and pilots won't fly if there's a pandemic, leaving the job of extricating Tamiflu from Switzerland to the U.S. Air Force.

Her vision of international relations in the context of pandemic flu and scarce medicine evoked the direst scenes of dystopian fiction.

She challenged the group to imagine, "Say you're Switzerland and there's a pandemic. You're going to grant permission to the USAF to land and take Tamiflu back to the U.S.? And what if the U.S. does have Tamiflu or a vaccine? What about our neighbors to the south? What relationships will we — or any of the wealthiest nations — have with the other 190 countries in the world AFTER the pandemic is over?"

Neither Garrett nor discussant Marc Lipsitch, an epidemiologist at the Harvard School of Public Health, offered containment, as in quarantines or border closings, as a silver lining in H5N1's menacing cloud.

The World Health Organization (WHO) "needs 14 days to mobilize, while Vietnam takes six weeks to report a case. Meanwhile, people with flu can be contagious and asymptomatic; air travel and border crossings persist, and health-care infrastructure doesn't exist in many places. Reluctantly, Washington, D.C., agencies are concluding that containment is not possible," she said.

For Garrett, a recent transparency agreement signed by President Bush and Hu Jintao, president of China, signals acknowledgement of H5N1's global threat. But national politics still need awakening if we — and our world — are to be ready.

A resident of Brooklyn, Garrett described New York City as more pandemic-ready than most, a lesson from 9/11.

"We've been through a lot. The New York plan assumes an attack rate of 15 to 25 percent with 1.2 to 2.8 million people infected, 6,000 to 280,000 people requiring hospitalization and deaths ranging from 12,000 to 114,000," she said. At least, there's a plan.

But the lessons of 9/11 have backfired on the federal level, skewing research and development of vaccines towards smallpox and anthrax — the bioterror threats to homeland security — rather than the incalculably more dreadful H5N1. Thus medical supplies are mortally scarce.

Garrett was frankly skeptical of politicians' grasp of what she believes is an impending pandemic, and she brushed fashionable debates aside in one stroke. "This is biology. If you don't believe in evolution, you can't understand it," she said.

Hurricane symposium zeroes in on response

Sasha Brown
News Office

The federal disaster response following Hurricane Katrina, heavily criticized in the media, was not all terrible, said Professor Kenneth Oye of political science and engineering systems at a panel discussion in Kirsch Auditorium on Sept. 30.

The discussion on "How Can We Improve Disaster Response?" was the first event in a four-part series of symposia exploring "Big Questions After Big Hurricanes," sponsored by the Katrina Response Advisory Committee. Aeronautics and Astronautics Professor and Director of the Engineering Systems Division Daniel Hastings moderated the panel.

"Federal response to Katrina varied markedly," said Oye, who focused first on the good work of both the Coast Guard and the National Weather Service.

Because of the weather service predictions, officials were informed well in advance, said Oye. Coast Guard members heeded the call and took the warning seriously, removing their families and assets from the region so that they could focus on their jobs.

Not as good was the response from the Federal Emergency Management Association (FEMA), which was crippled well before Katrina, said Oye. "Katrina was a reality test," he said. "The deficiencies and weaknesses (in FEMA) became apparent to all."

"There is enough blame to go around," said Professor Richard Larson of civil and environmental engineering, who is also director of the Center for Engineering Systems Fundamentals.

Larson pointed out the generosity of ordinary citizens who allowed victims into their homes and donated food, clothing and money to relief organizations as well as the "many stories of emergency responders who risked their lives." But, he said fundamental lessons culled from individual disasters can help planners prepare for the future.

Using a multitude of examples from the Oklahoma City bombing in 1995 to the United Airlines Flight 232 crash in Sioux City, Iowa, in 1989 — a response he graded with an "A plus" — Larson itemized a strong emergency response system.

Well-established trusting relationships are essential in emergency response, said Larson. Responders need to be well rehearsed and prepared. Triage is an essential component in getting the injured treated and saving lives.

After a disaster, inventory management becomes important so relief can be quickly and appropriately distributed. It is crucial to have an algorithm for relocation, Larson said.

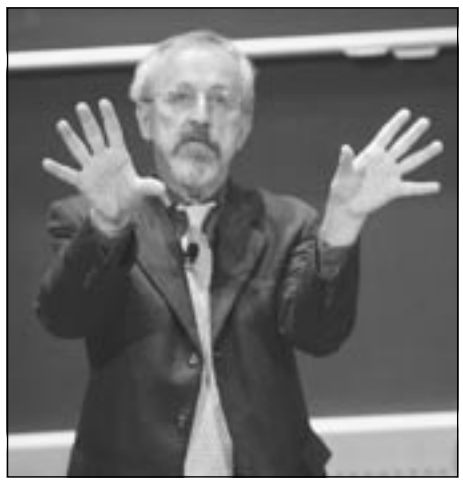

PHOTO / DONNA COVENEY

Professor Richard C. Larson spoke on 'Recurring Problems With Disaster Response Systems' at the symposium on hurricanes held in Kirsch Auditorium on Friday, Sept. 30.

He used the example of the New York Fire Department during Sept. 11, which was sufficiently prepared to be able to respond both to the massive attacks downtown and to routine emergency calls during the same time.

Ultimately, rehearsal and preparation make all the difference. By understanding the possibilities, the United States is better able to prepare. "We should not suffer from a failure of imagination," said Larson.

Civil and Environmental Engineering and Engineering Systems Professor Yossi Sheffi, who is also the director of the MIT Center for Transportation and Logistics, spoke of businesses and enterprises whose resiliency after a disaster could serve as a model.

Sheffi's book "The Resilient Enterprise" (MIT Press, October 2005) looks at the preparations and supply chain design of companies who bounced back from disaster.

"There is something in the DNA of companies that are resilient and do come back," added Sheffi. These attributes include: constant communication, distributed decision-making power, passion for the work and the organization's mission as well as disruption conditioning.

The kind of preparation that companies do well in advance can make or break them, he explained. The same is true for countries.

"Our current attention to the country's infrastructure situation means that we are living on borrowed time," said Sheffi. "In many ways, Katrina was a wake-up call."

Vice President Crowley to retire

MIT President Susan Hockfield has announced that John C. Crowley, vice president for federal relations, will be retiring in late December or January, after 14 years as the founding director of MIT's Washington Office.

In making the announcement, Hockfield said, "Jack has provided extraordinary service, not only to MIT but to all of the higher education community. His skillful and tireless work advancing national policies that promote education and research, to build strength in science, engineering and technology have benefited all of us."

John Crowley

Crowley joined MIT in 1991 when then-President Charles M. Vest established the MIT Washington Office to enhance MIT's contribution to national policy on science, engineering and education, and to make it easier for government officials to consult with MIT faculty on issues where scientific and technical advice may be needed. Crowley was named vice president for federal relations in 2000. Prior to his work at MIT, he served for 19 years as the first vice president of the Association of American Universities.

"He is without peer among university federal relations officers, and is revered by his colleagues across the country," Vest said. "He will leave an enviable legacy of effective service."

The Washington Office works with Congress and the executive branch to raise understanding of the contributions of higher education and research to the national welfare.

In 1994, Crowley joined with colleagues from 14 other universities to establish The Science Coalition, which now includes almost 60 leading public and private research-intensive universities, and gives a voice to the vital role played by federally funded university research across all agencies and disciplines. Crowley has served as MIT's primary representative to the Council on Federal Relations of the Association of American Universities.

Earlier this year MIT conferred its "Excellence Award" on Crowley in recognition of his success in making connections between MIT and its multiple constituents in academia and government.

Workshop offers guidance to help future female academics succeed

Deborah Halber
News Office Correspondent

Biological engineering graduate student Bree Aldridge attended the Forward to Professorship workshop to help her choose between a career in industry and one in academia.

She was quickly surprised by what she learned. "I didn't even know there was a service component," she said of the requirement that faculty members take up to 20 percent of their time to serve on Institute committees.

Aldridge was one of 45 graduate students, postdocs and junior faculty who participated in the free workshop held Sept. 30 and Oct.1 in the MIT Faculty Club. The workshop was sponsored by MIT's Graduate Student Office (GSO) to help young women negotiate the tricky path from graduate study to an academic career.

The "forward" in the Forward to Professorship workshop stands for Focus on Reaching Women for Academics, Research and Development in science, engineering and mathematics. The workshop is the brainchild of several Washington, D.C.-based women faculty members, including George Washington University Professor Catherine Mavriplis, who received a Ph.D. in aero/astro from MIT in 1989. Mavriplis saw the need to provide women with skills, strategies and "insider information" to get and succeed in a tenure-track position. "There was nothing like this when I was at MIT," she said.

With National Science Foundation funding, the workshop expanded and became available beyond Washington. GSO Dean Isaac M. Colbert sought out the workshop for MIT because, he said, "Young people need all the help and counsel they can get on how to be successful." He said the response has been "tremendous."

Keynote speaker Maria Klawe, professor of engineering and applied science at Princeton University, said that the young women she encounters at the Forward workshops are bright and ambitious, but she hopes to lend words of encouragement on "how to succeed when the cultural message they are receiving is, 'You don't belong here'" in male-dominated professions.

Workshop presenter Charlene Sorensen, who teaches chemistry at Gallaudet University, told participants they need a plan if they want to squeeze family life, friends, spiritual associations, fitness and fun into a profession that can leave no time for such extras.

"When you look at all the things you need to do for an academic career, it may add up to more than 40 hours or even more than 60 hours a week," Sorensen said. "You need a plan for balancing career and life so you don't get caught up in day-to-day minutiae and don't meet your long-term goals."

Participants attended sessions on planning and funding research; negotiation strategies; and creating strategies for balancing family and career, including how to deal with "negatives" such as having a baby and how to say no "firmly but nicely" to yet another committee.

CANCER

Continued from Page 1

ing toxic side effects, Langer said.

"We proposed making nanoparticles with units attached to them — homing devices, if you will — that would target only cancer cells."

The first challenge of this project is to isolate these "homing devices," RNA molecules called aptamers, that bind specifically to prostate-tumor antigens and will be taken up by the cancer cells. The second challenge is to construct a safe, biodegradable nanoparticle that can carry a drug on the inside and bind with an aptamer on the outside.

Another project, led by Sharp, takes a biological approach to the treatment of cancer. In this effort, researchers will use nanomaterials to deliver short interfering RNAs (siRNAs) to cancer-causing genes associated with lethal cancers, like glioblastoma, with ineffective treatment options. SiRNAs are tiny sequences of RNA that, when introduced into a cell, slice up the gene from which they originated, thereby silencing the expression of the gene.

Though potentially powerful tools in the anti-cancer arsenal, siRNAs are difficult to deliver to tumor cells; hence, this project explores two complementary approaches. One is to attach siRNAs and peptides (fragments of proteins) to the surface of nanoparticles. The intention is that the peptides, like heat-seeking missiles, will zero in on tumor cells, binding with them and dumping the nanoparticle's payload of siRNAs. Because siRNAs may be vulnerable to destructive enzymes, another approach is to incorporate them directly into the nanoparticle itself, protecting the siRNAs with miniature "armor-plating."

"SiRNA technology is very new and this has never been tried before," Sharp said. "The benefit is that if we can master the technology of delivery, then we can probably treat many different forms of cancer many different ways."

How these and other projects will turn out is anyone's guess. But, as Jacks concludes, "The best way MIT can deploy its assets in the war against cancer is to bring together people like Bob Langer and Phil Sharp on the same problem."

AWARDS & HONORS

Two MIT professors have been selected as Office of Naval Research Young Investigators. **Kristala L. Jones-Prather**, assistant professor of chemical engineering, and **Cynthia L. Breazeal**, associate professor in the School of Architecture and the Media Laboratory, were two of 28 scientists chosen by the ONR in June. The program is designed to attract young scientists who show exceptional promise for outstanding research and teaching careers.

PHOTO / **DONNA COVENEY**

Marisa Cheng, a grad student in urban planning, left, and Celina Balderas, a junior in architecture, show Professor Jan Wampler how their portable homeless shelter opens up.

Architecture students design and build homeless shelters

Scott Campbell
School of Architecture and Planning

You'd be surprised what students can make out of stuff other people throw away.

Eighteen architecture majors, most of them juniors, were assigned the task this fall of designing and building one-person homeless shelters from recycled materials found in and around MIT and Cambridge.

Working in teams of four or five, the students had five days to design and build their shelters, each team working with a budget of $50. An important aspect of the project was to orient students to the need for social architecture — architecture that is meant to redress social problems — and to make them aware of how much useful material we throw away. Ultimately, the shelters were to aspire to the quality of a quilt — something artful and useful made from recycled materials.

The project was an assignment in a level-one studio — for most, their first design studio — taught by Professor Jan Wampler and lecturer Alan Joslin, both in the Department of Architecture. The emphasis of the studio is on building "in the landscape" so as not to intrude too much on surroundings.

Shelters had to be unobtrusive and portable; fit into a shopping cart or roll on wheels; keep out the elements; and provide some warmth in winter and ventilation in the summer.

Students built the shelters with the help of Technical Instructor Chris Dewart.

PHOTO / **DONNA COVENEY**

Andrea Urmanita, a senior in architecture, folds up the portable homeless shelter that her team made for Professor Jan Wampler's class.

Latina students and alumnae lift voices in film

Sarah H. Wright
News Office

"Nuestras Voces: Being Latina at MIT," a documentary produced by Latina MIT students and alumnae and by faculty in the foreign languages and literature section, has been included in the 2005 New England Film and Video Festival.

The prestigious annual festival, now in its 30th year, runs from Oct. 6 through 10. "Nuestras Voces" premiered at MIT in March 2004 and will be shown at the Coolidge Corner Theatre in Brookline on Friday, Oct. 7, at 7 p.m.

Margarita Ribas-Groeger, director of Spanish language, co-directed the original project — a wide selection of video interviews — and helped edit those 20 hours of tape into the dramatic yet intimate portrait of seven Latinas that appealed to film festival judges.

In "Nuestras Voces," Latina students who came to MIT from Chilean, Cuban, Dominican, Mexican and Puerto Rican families share their own "challenges and successes, while giving voice to women whose efforts and struggles are often not recognized and who are underrepresented in higher education," Ribas-Groeger said.

The MIT group hoped "Nuestras" would reach both college students and a younger Latina community, including women in high school or junior high, for whom these stories "could be a source of inspiration. Also, a documentary about Latina students can educate a mass audience about the cultural issues that surface as minority individuals become members of institutions like MIT," Ribas-Groeger said.

The Latinas in "Nuestras" are Jazlyn Carvajal '04, Kateri Garcia '03, Maribel Gomez '02, Dalie Jimenez '01, Nelly Rosario '94, Karina Vielma '01 and Nicole Vlado '02.

For Jimenez, participating in "Nuestras Voces" was a "fantastic experience." She said, "Not only did I get to tell my story and process it at the same time, I also got to hear stories of other MIT women."

Jimenez currently works as director of special projects for state Sen. Jarrett Barrios (D-Cambridge). In her view, "Nuestras Voces" has "many things that speak to non-Latino women, that speak to immigrants or children of immigrants. Its biggest asset is that it can reach a large audience," she said.

As "Nuestras" opens, it introduces the Latina students, their familial and community relationships, and the response they received from their families, high school teachers and counselors when they expressed interest in going away to college.

The middle section depicts the women's lives at MIT, and in the end, the seven students reflect on how they changed during their time at the Institute.

It's a simple video, yet its candor cuts right to the heart of many young women's experience, Jimenez said.

"I've seen women cry when they see it and others be visibly moved. The film is powerful because it delves into the lives of these seven women, and at the same time it speaks about something much larger than them and their particular circumstances. I think it's definitely helped others, in particular younger women, truly understand that there have been women who came before them and had very similar experiences. That is comforting; it validates your experience," Jimenez said.

Adriana Gutierrez co-directed "Nuestras" with Ribas-Groeger. Cynthia Conti '01, editor and director of photography, filmed and edited the interviews. Isabelle de Courtivron, professor in the foreign languages and literature section, and Nancy Lowe, administrative officer, provided support.

The project was also supported by the Center for Bilingual/Bicultural Studies, the dean for undergraduate education and the dean of the School of Humanities, Arts and Social Sciences.

HP Inc. - Exhibit 1011 - Page 4

It's a bug's life: MIT team tells moving tale

Elizabeth A. Thomson
News Office

MIT mathematicians have discovered how certain insects can climb what to them are steep, slippery slopes in the water's surface without moving their limbs — and do it at high speed.

Welcome to the world of the tiny creatures that live on the surface of ponds, lakes and other standing bodies of water. There, "all the rules change," said David Hu, a graduate student in the Department of Mathematics and first author of a paper on the work to appear in the Sept. 29 issue of Nature.

For the last four years, Hu and John Bush, an associate professor in the department, have been studying the novel strategies these insects use to navigate their environment. To do so, they took high-speed video of the creatures using a camera provided by MIT's Edgerton Center, then digitized and analyzed the images.

In 2003, the two and Brian Chan, a graduate student in the Department of Mechanical Engineering, reported in Nature how some of these creatures walk on water. Both that paper and the current one were Nature cover stories.

Now Bush and Hu are describing how three species of insects are able to climb the slippery slopes, or menisci, that arise when the water surface meets land, floating bodies or emergent vegetation.

Why would they want to leave the water? "There are many reasons, such as laying eggs or escaping predators," said Hu.

Menisci are all around us — picture the slight upward curve of water in a glass where it meets the side. "But we don't notice them because they're so small, only a few millimeters in height," said Hu. But if you're a creature that's much smaller than that, those slopes "are like frictionless mountains," Hu said. "Plus, it's slippery."

PHOTO COURTESY / **HU AND BUSH**

The larva of a waterlily leaf beetle gets ready to propel itself up onto a leaf using a technique recently discovered by MIT researchers.

In these conditions, the insects' normal modes of propulsion won't work. Hu and Bush took high-speed video of insects trying to ascend menisci with a running start and found they got partway up, then slid back down.

The solution? The creatures adopt special postures that create forces that pull them up the slope at speeds of almost 30 body lengths per second (for comparison, an Olympian sprinter moves at about five body lengths per second).

For example, Hu and Bush found that two species of water treaders have retractable claws on their front and hind legs that allow them to "grasp" the surface of the water and pull it into a miniscule peak. The insect simultaneously presses down on the water with its central pair of legs, forming dimples in the water surface that bear the creature's weight.

Because the insects are so small, these perturbations create forces that suck them up the slope, similar to the way champagne bubbles rise to the edge of a glass.

Bush explains that the insect is actually "generating tiny menisci" with its front and hind legs. Since menisci are attracted to other menisci, the cumulative effect is to pull the insect up and over the meniscus at the water's edge.

Remember the champagne bubbles? Each essentially forms its own meniscus, hence the attraction to the edge of the glass.

The larva of the waterlily leaf beetle solves the same problem a different way. The sluglike creature simply arches its back, creating menisci at each end. The effect has the same end result, propelling the larva up the slope.

Bush and Hu got involved in this work because they wanted to explain how these creatures do what they do. Bush notes, however, that "the physics is also of interest to people working in nanotechnology because they, too, are concerned with problems at very small length scales."

Hu will be defending his thesis on Sept. 28.

This work was sponsored by the National Science Foundation.

PHOTO / **DONNA COVENEY**

In a reflective mood

Mechanical engineering students line up in Killian Court on Friday, Sept. 30, with mirrors to reflect the sun. They were focusing sunlight on a cardboard boat in hopes of setting the boat on fire. They did not succeed. The Greek mathematician Archimedes is said to have burned Roman ships this way, 2,200 years ago.

Author, alumnus tell tale of 'Busting Vegas'

Sasha Brown
News Office

Since graduating from MIT in 1993 with a master's in computer science, Semyon Dukach has founded three technology startup companies and won millions of dollars at casinos from Las Vegas to Monte Carlo.

Ben Mezrich, who wrote about MIT's infamous blackjack team in "Bringing Down the House," told Dukach's story in his latest book, "Busting Vegas," just released last week. On Sept. 28, Dukach and Mezrich came to MIT to talk about the new book.

Hundreds of students lined up early to see Dukach and Mezrich in Room 10-250. Seated in personalized director's chairs, the two talked of Las Vegas, blackjack and the world of gambling.

In his latest book, Mezrich explores what he calls, "the darker side of Vegas." Though he had not intended to write about MIT again, he said that when Dukach contacted him, he could not pass up the opportunity. "What could be better than a bunch of MIT kids hitting up Monte Carlo?" he said.

Mezrich's first book was on the bestseller list for 59 weeks and Kevin Spacey is starring in the movie version, which is currently being cast in Los Angeles.

Dukach, who read that book, wanted Mezrich to tell his story of beating the house.

The Russian immigrant first discovered blackjack growing up in Houston, Texas. "I played a lot of Pac-Man," he said. One day, while looking for a Pac-Man book by a certain author, he discovered that author had written dozens of books on blackjack. From there, he was hooked.

Using a "very quantitative way of approaching the problem," Dukach developed a system of skilled play that was previously undiscovered.

When Dukach decided to use his skills to win, he said, "It wasn't just the money." He said he dislikes casinos. "It's a con. At the end of the day, they are going to take all."

Over the years, Dukach estimated that he and his team earned at least $5 million. "It definitely wasn't wrong," Dukach said, although he did admit that his methods walked a "fine line of legality."

Eventually, the casinos did catch on to Dukach and he is now unwelcome at blackjack tables throughout the United States and the world. Additionally, rules in many casinos have been altered because of his methods. "They only want losers in the casino," said Dukach.

Both Dukach and Mezrich hope that the book will force readers to take a hard look at both the casino industry and gambling in general. "Everyone who gambles loses and the casinos cover that up," said Mezrich.

Mezrich is asked to speak at a number of high schools. While he knows his subject is a bit racy for the younger set, he also understands why teachers might be interested in his book. "Every 15-year-old in this country gambles. It's a national pastime," he said.

By using what students are interested in pursuing, teachers can reach them in new ways: "The lesson here is that math can be your friend," said Mezrich.

AUTISM

Continued from Page 1

devastating brain disorder," Sur said.

"MIT is entering a new era of neuroscience and cognitive science," said MIT President Susan Hockfield. "The timing has never been better for applying our new ideas and technologies to understanding brain disorders."

Under the grant, research projects will be led by Sur; Mark Bear, Picower Professor of Neuroscience at the Picower Institute for Learning and Memory; John Gabrieli, Grover Hermann Professor of Health Sciences and Technology and Brain and Cognitive Sciences and associate director of the Athinoula A. Martinos Center for Biomedical Imaging; Ann Graybiel, Walter A. Rosenblith Professor of Neuroscience in the McGovern Institute for Brain Research; Pawan Sinha, associate professor of Brain and Cognitive Sciences; and Susumu Tonegawa, director of the Picower Institute for Learning and Memory and Picower Professor of Neuroscience.

Collaborators include researchers at the Yale Child Study Center, University of Sydney, Boston University, Children's Hospital Boston and Massachusetts General Hospital.

The grant also will fund a new Boston-area seminar series on autism and developmental disorders hosted at MIT.

In making the grant, the Simons Foundation noted, "We are excited to be involved in supporting the work of these exceptional scientists, and hope their insights will enhance our understanding of this serious life-term disorder."

The projects are:

- Using new gene targeting, physiological and imaging techniques, the Sur team will develop tools for creating mouse and other animal models for autism and explore whether autism-related genes are involved in two key aspects of brain development and function.
- Bear will look at mutations in the gene causing Fragile X syndrome, which shares similarities with autism.
- Gabrieli will seek to understand how neurons play a role in autistic individuals' problems with social interaction and face recognition.
- Graybiel's team has cloned genes that may be related to autism or related disorders and will seek to understand the function of two molecules of a particular group.
- Sinha studies face processing ability in children with autism and is developing a methodology to help them refine skills.
- Tonegawa's team will investigate the functional interaction between two genes that are implicated in both Fragile X syndrome and autism.

Professor Emeritus Donald Harleman dies at 82

Sarah H. Wright
News Office

Donald R. F. Harleman, a renowned civil engineer whose love for the ocean and expertise in water quality and waste treatment benefited urban harbors throughout the world, died of cancer on Sept. 28 on Nantucket, Mass. He was 82.

Harleman was an engineer, scientist and educator, recognized nationally and internationally, whose research and innovations were directed toward improving water quality and making wastewater treatment available and affordable to all.

He was a global leader in advancing the case for technologies like chemically enhanced primary treatment (CEPT) as an alternative to expensive biologically based systems commonly used in the United States.

Harleman advocated strongly for implementing CEPT technology as part of the Boston Harbor cleanup. Although it was not adopted in Boston, CEPT became the wastewater treatment technology of choice in a number of developing countries, thanks to his efforts.

Harleman, a native of Palmerton, Pa., was a longtime resident of Nantucket and Lexington, Mass. A specialist in hydraulics, he came to MIT in 1950, serving as Ford Professor of Environmental Engineering from 1975 to 1990. He retired as Ford Professor emeritus in 1991.

A devoted teacher, Harleman also brought his expertise and enthusiasm to the next generation through leadership at the Institute. He served as head of the Water Resources and Environmental Engineering Division from 1972 to 1983 and as director of the Ralph Parsons Laboratory from 1973 to 1983.

Under Harleman's leadership, the Parsons Laboratory evolved from a premier center of hydraulic research to global leadership on water resources. Students from all over the world benefited from the mentorship of Harleman and his wife, Martha. His legacy continues: The Parsons Laboratory remains in the forefront of research and education in the water environment.

Donald Harleman

Harleman served on advisory boards for the cleanup of Boston Harbor and Massachusetts Bay, Chesapeake Bay in Maryland, and Honolulu and Hong Kong harbors. Outside the United States, Harleman worked with advisory groups in Australia, Brazil, China, India and Mexico and the developing world to manage or clean up effluent from megacities. Since 1995, he had been an advisor to the Italian government agency charged with protecting Venice against storm tide flooding.

According to his son Robert, Harleman's two favorite places were Venice and Nantucket, and he was passionate about sailing, opera, gardening, Italian food and good political discussions.

Harleman married the former Martha Havens in 1950. He received the B.S. degree from Pennsylvania State University in 1943 and the S.M. and Sc.D. degrees from MIT in 1947 and 1950, respectively.

He was a member of the National Academy of Engineering and an honorary member of the Boston and American Societies of Civil Engineers.

In 2000, MIT established the Donald and Martha Harleman Professorship to support a faculty member whose service within and outside the Institute extends the example set by the Harlemans.

Harleman is survived by his wife; a son, Robert I.H. Harleman of Wilton, Conn; two daughters, Kathleen T. Harleman of Champaign, Ill., and Anne Harleman Krieger of New Canaan, Conn.; and six grandchildren.

A memorial is planned for later this fall in Cambridge.

In lieu of flowers, the family has asked that donations be made to the Nantucket Hospice Care Center, www.hospiceofnantucket.org, and Nantucket Hospital (Home Care Department), www.nantuckethospital.org.

Happy 30th, Boston Review

Sarah H. Wright
News Office

The Boston Review, an independent political and literary magazine edited by Joshua Cohen, professor of political science and philosophy, and Deb Chasman, will celebrate 30 years of continuous publication with a gala on Tuesday, Oct. 11, from 6 to 9 p.m. in the 4th floor commons of the Stata Center.

To honor the Review's mix of essays, fiction, poetry and general ease at the cutting edge, the event will include readings by poets Jorie Graham, winner of the 1996 Pulitzer Prize, and Frank Bidart, author of "Music Like Dirt"; Lani Guinier, Harvard Law School professor; and Elaine Scarry, literary theorist and Harvard professor of aesthetics.

Hosts for the evening include Cohen; Review fiction editor Junot Diaz, an associate professor in the program in writing and humanistic studies; Nancy Kanwisher, professor of brain and cognitive sciences; Michael Piore, professor of economics; Richard Locke, professor of management; and Richard Samuels, director of the Center for International Studies.

The Review aims to establish a "space in which people can loosen the hold of conventional preconceptions and develop a richer language of public discourse. We are convinced that the imagination eludes political categories, and that open public debate lies at the heart of democracy's great promise," Cohen wrote in an introduction to a greatest-hits-style section of the current issue.

And what great hits they are. Just among the MIT faculty, contributors have included Noam Chomsky (linguistics); Alex Byrne and Judith Thomson (philosophy); Rebecca Saxe (cognitive sciences); Alan Lightman (writing); Peter Diamond (economics); Stephen van Evera and Stephen Ansolabehere (political science); Philip Thompson (urban studies and planning); and Philip Khoury, dean of Humanities, Arts, and Social Sciences.

For more information about the celebration, visit bostonreview.net.

PHOTO / **DONNA COVENEY**

Feel the magnetic force

MIT's Francis Bitter Magnet Laboratory (FBML) receives its new 900 MHz superconducting magnet on Wednesday, Sept. 21.The magnet, a cylinder roughly 10 feet high by 6 in diameter and weighing 7 tons, generates a magnetic field of 21.1 Tesla, about 400,000 times larger than the Earth's magnetic field. The magnet is part of the MIT-Harvard Center for Magnetic Resonance supervised by Professor Robert Griffin of chemistry, director of the FBML, and Professor Gerhard Wagner of Harvard Medical School.

Hugh Herr wins Popular Mechanics' leadership award

Assistant Professor Hugh Herr of the Program in Media Arts and Sciences has won Popular Mechanics magazine's first annual Breakthrough Leadership Award for his work with prosthetics.

The award, announced Sept. 29 at the American Museum of Natural History, salutes an individual whose ongoing contributions provide inspiration to others and substantially change the rules of the game.

"What's most impressive about Herr is how passionately he drives himself to improve technology and the lives of those he helps," said James Meigs, editor in chief of the magazine. "He is constantly shifting his own goalposts further down the field and this is why Popular Mechanics has singled him out for this special recognition."

Herr was chosen from among the 10 winners of Breakthrough Awards for work in "helping to improve lives and expand possibilities in the realms of science, technology and exploration."

A complete report on the Breakthrough Awards will appear in the November 2005 issue of Popular Mechanics (on newsstands Oct. 11).

OBITUARIES

WILLIAM ALEXANDER

William "Ben" Alexander, a retired Lincoln Laboratory employee and World War II Navy veteran, died Aug. 21. He was 82. He is survived by his wife, Virginia M. Gregory-Alexander of Woburn; a son, Matthew Gregory Alexander of Woburn; two daughters, Janet Garrity of Woburn and Carol Vigilante of Duxbury; a brother, Benjamin Alexander of Texas; two sisters, Sara Elmore and Betty Holbrook of McKinney, Texas; 10 grandchildren and many great-grandchildren.

FREDERICK WILSON

Frederick D. Wilson, of Everett, a retired MIT employee of 43 years and Air Force veteran of the Korean War, died Sept. 9. He was 72. He is survived by his wife, Andrea Wilson; two sons, Frederic M. Wilson of Everett and David S. Wilson of Korea; two brothers, John Wilson of Billerica and Irving G. Wilson of Peabody; and three grandchildren. Wilson, a research specialist in materials science and engineering, received the James N. Murphy award in 1994.

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

Sofa & 2 armchairs, exc. cond., $400; 30 in. dia. kitchen table & 4 chairs, exc. cond., $100. nhmw@mit.edu or 253-5046.

Approx. 50 years of MIT Technology Review (1954-2005). E-mail gol@alum.mit.edu.

HOUSING

No. Andover, new condo (built 2004) 2BR, 2 baths, hrdwd floors, C/A, washer/dryer, balcony w/private view, spacious wide unit, contemporary, light. Clubhouse, fitness center pool, $342,000. Call Sylvija Aprans at 978-482-4120.

VEHICLES

2002 Honda Accord LX sedan, 4-door, auto, silver, AM/FM/CD, power doors & steering, well-maintained, new brakes, 27K, $14,500. 258-7372 or 781-729-4591.

1990 BMW 525i, 158K, light blue exterior, tan leather interior, cassette player, 6-CD changer. Mechanically sound, 5-speed manual, power windows & locks, power sunroof. New tires, battery, alternator, oil pan & brakes. Asking $2,800. 617-875-9655.

1993 Ford Thunderbird, 2-door, black, 118K, remote start, stereo system, runs good, recently passed inspection, $1,200/bst. Car is located in Wilmington, MA. Call Chris at 617-678-8828 or e-mail dgale@mit.edu.

STUDENT EMPLOYMENT

Positions for students with work-study eligibility

Established start up needs statistical detective to document participation in program activities. Program assistant will attend board meetings, take notes, maintain program computer database and calendar, and coordinate contacts w/ parent group leaders and members. Send resume to annals@mit.edu. Req.: accuracy in computer keying, interest in social service, ability and willingness to work independently, good references. www.parentsforum.com. $12/hr.

1-year paid internship, assisting day to day operations and administrative tasks, help develop and implement communication and outreach tools. Responsibilities include editing and producing communication pieces, project mgmt of PR activities, assist development of annual Ignite Clean Energy Competition (www.igniteclean-energy.com). Qualifications: strong research, fact-checking and writing skills, interest in technology entrepreneurship and renewable clean energy a plus, creative, detail oriented, mature, responsible, highly organized, fast paced environment, etc. Send cover letter and resume to achaney@mit.edu. $20/hr.

Senegal trip adds rhythm to Rambax

Amanda Smyth
Office of the Arts

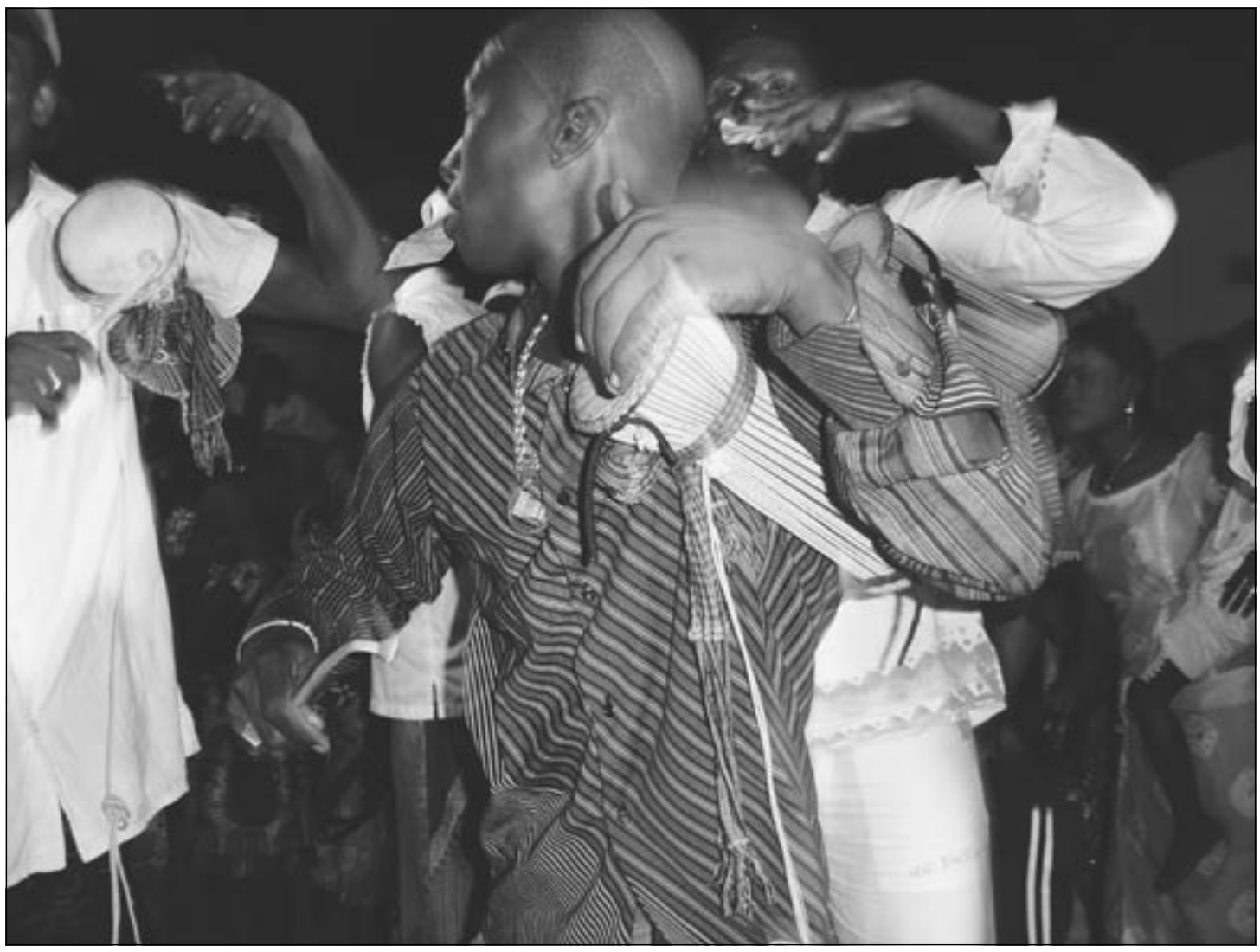

PHOTO / **PATRICIA TANG**

Yatma Thiam and his tama (talking drum) troupe performing at Rambax's evening drum and dance party in Dakar, Senegal, on June 3.

For 11 members of MIT's African drumming ensemble, "Rambax," the West African nation of Senegal was more than a vacation destination. This past spring, the MIT student musicians spent three weeks playing, studying and absorbing Senegalese culture during the group's first summer study tour.

On Sept. 14, Rambax co-founder and director Patricia Tang and some of the group members spoke about their extraordinary trip during the first Arts Colloquium of the semester. The presentation, attended by faculty, students, members of the Council for the Arts and Council Scholars in the Arts, was hosted by Associate Provost for the Arts Alan Brody.

Tang organized and led the trip to give the group a chance to study and perform the traditional art of sabar drumming within its cultural context — among and for the Wolof people of Senegal.

"We did not want to arrive there with this idea that we would show the Senegalese how to play their own music," said Tang, associate professor in the Music and Theater Arts Section and a specialist in Senegalese music. "We wanted to show them that we cared so much for Senegalese culture that we wanted to learn their art."

Students lived and practiced with the family of Lamine Touré, co-founder of Rambax and a native traditional Senegalese drummer. Touré is an MIT lecturer in music and theater arts.

Sabar drummers use one hand and one stick to create either a dance rhythm or a "bakk," a musical phrase that is composed by musicians, "griots," and is passed down through the generations. "Mbalax" is the basic accompaniment beat played on the smallest drum, and "tulli" and "talmbat" are the two bass drum accompaniments. Together they create the basis by which the lead drummer carries the main beat.

There is no sheet music and the resulting sound is a chaotic, frenzied beat that starts at your foot and works its way up to your bobbing head until you cannot help but dance. It is beautiful and wild and harmonic at the same time.

The students not only strengthened their drumming abilities, but also held a poster exhibit and social hour with students from Université Cheikh Anta Diop in Senegal. Students from both continents shared ideas and scientific, mathematic and musical projects.

Students also performed. One night they set up two street festivals, one for children and one for adults. The next night they performed at the Soiree Senegalese, a nightclub that features pop music along with traditional drumming.

"We got a great reception from the people there," said Sasha Devore, a graduate student at the Whitaker College of Health Sciences and Technology, who has been drumming for four years. "It was absolutely amazing. We did so much and everyone was so excited to show us their culture and their way of drumming and to learn our way and to really share in the experience. I would definitely go back."

Rambax was created in 2001 after Tang had spent several years studying Senegalese music. She lived in Dakar, Senegal, from 1997 to 1998, and the experience was unforgettable, she said. She felt her students needed context to fully understand the art of sabar drumming.

"We used to say, 'wouldn't it be fun to go to Senegal,'" said Tang. "But within the last year, we realized that we had several of our students graduating, and that it was now or never. Students even went so far as to buy their plane tickets before we had received funding from the school for the trip."

Prior to traveling, Tang put her students through a cultural orientation. Students were taught the importance of eating with their right hands and sharing a communal food bowl as they do in Senegal. Although there were many health and cultural concerns, the students were more than prepared upon arrival and even learned enough of the Wolof language to offer thanks and compliments to their hosts and townspeople.

"We showed the people of Senegal how culturally diverse our MIT group was," said Tang. "We have students from Brazilian, Vietnamese, Hispanic backgrounds … all different nationalities who come together for the love of drumming."

At the presentation, Tang showed videos of Rambax's performances in Senegal. In each video, the drummers smiled with exuberance as they felt the rush of what Devore called, "losing themselves inside the music while remaining focused on your surroundings."

"Our drumming has changed since we came back," said Devore. "We learned the cultural rhythm. We have context now. When we play, we can feel the ocean; we can smell the smells and feel the dust. We drummed ourselves to exhaustion and simply lost ourselves in the music. Our drumming has definitely changed since our trip."

The tour was funded in part by the Council for the Arts at MIT, the offices of the Chancellor, Dean for Undergraduate Education and Dean for Graduate Students, and the Music and Theater Arts Section.

For more information on Rambax, visit their web site at web.mit.edu/Rambax.

Hockfield to perform in concert

Lynn Heinemann
Office of the Arts

PHOTO / **THOMAS MAXISCH**

Fred Harris conducts the MIT Wind Ensemble. MIT President Susan Hockfield will perform with the ensemble on Oct. 14.

The annual Family Weekend Concert on Friday, Oct. 14, features two of the newer members of the MIT family — MIT President Susan Hockfield and her husband, Dr. Thomas Byrne, who will together narrate the MIT Wind Ensemble's performance of Aaron Copland's "Lincoln Portrait."

Frederick Harris, director of MIT's Wind Ensemble, says he's always wanted to present the piece. Written in 1942, shortly after the attack on Pearl Harbor, the piece combines excerpts from some of Lincoln's speeches with musical quotations from such well-known American songs as "Camptown Races."

People from all walks of life have narrated the work, but to Harris' knowledge, never an MIT president. "I thought it would be great — and pretty rare as far as I know — to have Drs. Hockfield and Byrne collaborate and get to know the music and theater arts students on a musical level," he said.

It's also unusual, he said, to have two narrators for the piece.

The president's MIT performance debut will be preceded by the Wind Ensemble's performance of Professor Peter Child's "Fanfare and Fugue," which was written for Hockfield's inauguration.

The Wind Ensemble will also perform Vaughn Williams' "Toccata Marziale," Persichetti's "Divertimento" and Copland's "Down a Country Lane," with senior Daniel Steele on piano; the MIT Festival Jazz Ensemble will perform works by Thelonious Monk, Duke Ellington, Billy Strayhorn and Charlie Parker.

The free concert is in Kresge Auditorium. For more information, call x3-2826.

ARTS NEWS

Musical images

Best known locally for his musical "sound stairs" in Boston's Museum of Science, **Christopher Janney** (S.M. 1978) fuses his two passions — music and architecture — by relying on sound to transform space. Tonight at the Berklee Performance Center (136 Massachusetts Ave., Boston), he'll present his latest project: a "visual instrument" that allows him to "play" multiple images and forms in real time. "Technology is now at the level where I can create 'poly-visual music' — multiple images interacting simultaneously via my synth keyboard and the other players," Janney says.

He'll perform his "Visual Music Project" at 8:15 p.m. with Moksha, a Berklee faculty band.

Flying the coop

Dan Liston (S.B. 2004) is in the company of Hijinx Unlimited's world premiere production of "Spring Chicken or When I Flew the Coop," playing Oct. 13-23 at the Devanaughn Theatre at the Piano Factory (791 Tremont St., Boston).

Written by Pennsylvanian playwright Chris Davis, "Spring Chicken or When I Flew the Coop" is a celebration of the language, survival and friendship of five men "on an epic allegorical journey to reach the KFC" and is loosely based on Davis' experiences in South Africa.

For more information, see www.hijinx-unlimited.com.

Window scenes

Boston Art Windows, a joint project of the City of Boston and the Boston Redevelopment Authority, presents $ome ©olor, a group exhibition of site-specific installations on view in Boston s Downtown Crossing area.

The artists include **Magda Fernandez** (administrative assistant, Office of the Arts), creator of "Mars Inc.," a work-in-progress of digital photos that imagines the development of Mars in the image of the United States' own evolution.

Also, **Meg Rotzel** (administrative assistant, Center for Advanced Visual Studies) and **Jae Rhim Lee** (graduate student, Visual Arts Program) have collaborated on "Service: Me for You," which pays tribute to all the women and men working in the area. The artists will perform errands and services for each other in uniform and document their actions. Both installations can be seen on Avery Street.

The Boston Art Windows project, established to enliven the windows of commercial property with cutting-edge contemporary art, can be seen through Monday, Oct. 31.

MIT EVENT HIGHLIGHTS OCTOBER 5-9

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

PHOTO COURTESY / **LEXINGTON SYMPHONIETTA**

Chamber concert

The Lexington Symphonietta Chamber Players — left to right, Barbara Poeschl-Edrich, William Kirkley, Danielle Boudrot, Bradley Ottesen, Elizabeth Whitfield, Barbara Oren and Paul Glenn — will perform at the MIT Chapel at noon on Thursday, Oct. 6.

WEDNESDAY October 5

"Scientific Settings: Photos of MIT Labs"
Photographs by Scott Globus, MIT Class of 1984, taken during the early 1980s. 9:30 a.m.-5 p.m. Room 10-150. 253-4444.

EAPS Victor Starr Memorial Lecture
Professor Friedrich Schott of the University of Kiel (Germany) talks about "Tropical-Subtropical Interactions in the Oceans." 4–5:30 p.m. Wong Auditorium. 253-2281.

"Modernizing France, Realizing Europe"
Talk by Jean-Francois Cope, French minister of the budget and state reform. 5-6:30 p.m. Room E51-145. 253-8095.

Mind & Body Relaxation Techniques
Talk by Chi-Sung Hung. 7-9 p.m. Simmons Hall. 324-6030.

THURSDAY October 6

MIT Chapel Concert
Lexington Symphonietta Chamber Players. Noon. Chapel. 253-9800.

"The European Security and Defence Project: What It Probably Is and What It Certainly Is Not"
Talk by Jolyon Howorth. Noon. Room E38-615. 253-7529.

The Picower Lecture
Talk by Josh Sanes. 4 p.m. Room E25-111.452-2485.

Writer's Series: Haruki Murakami
Reading by Haruki Murakami, Japanese writer and translator. 7 p.m. Room 10-250. 253-7894.

FRIDAY October 7

"Moscow Does Not Believe in Tears / Moskva Slezam ne Verit"
Film made in USSR, 1980. 6 p.m. Room 3-133. 258-8438.

Bench Press Competition
7-9 p.m. Z-Center, MAC court. 258-9643.

MIT Anime Club Weekly Showing
MIT Anime Club shows the best of recent and classic Japanese animation. 7 p.m. Room 6-120.

"Wait Until Dark"
LSC Fall 2005 Classic Film Series. $3. 10:30 p.m. Room 10-250. 253-3791.

SATURDAY October 8

Introduction to Self Defense
Jiu-Jitsu class covering basic self-defense skills: jointlocks, submission holds, throws, strikes, weapons, ground-defense and weapons defense. 3-5 p.m. DuPont Wrestling Room.

Malaysian Mamak Night
Dinner of traditional hawker-style food, including roti canai and teh tarik. 6:30-8:30 p.m. Next House Dining. 253-9737.

"Saving Face"
LSC Fall 2005 Film Series. 7 p.m. Room 26-100. 253-3791.

Ballroom Social Dance (participatory)
Evening of social dancing including ballroom and Latin dances, along with favorites such as salsa, hustle and merengue. $10, $6 students. Beginners 7:30 p.m., non-beginners 8 p.m. Lobby 13.

SUNDAY October 9

Varsity Sailing - Metro Series Five
9 a.m. Charles River. 258-5265.

"War of the Worlds"
LSC Fall 2005 Film Series. 7 p.m. Room 26-100. 253-3791.

International Folk Dancing
8–11 p.m. Lobdell Dining Hall. 253-FOLK.

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

BIG HURRICANES, BIG QUESTIONS — *Oct. 5*
"How can communities, cities and regions recover from disaster?" Part of MIT-wide symposium series.
Kirsch Auditorium
4-6 p.m.

IG NOBEL LECTURES — *Oct. 8*
Speeches by the winners of the 2005 Ig Nobel Prizes.
Room 10-250
1-3 p.m.

CHRISTIAN JANKOWSKI — *Oct. 14*
Opening reception for Jankowski's exhibit, "Everything Fell Together." Exhibit runs Oct. 14-Dec. 31.
List Visual Arts Center
6-8 p.m.

MIT EVENT HIGHLIGHTS OCTOBER 10-16

MONDAY October 10

Columbus Day

"Iquarium"
A virtual fluid flow display. 9 a.m.-8 p.m. Hart Nautical Gallery. 253-5942.

Acconci Studio Projects on View
Videos, prototypes, a giant wall panel and other documentation of recent and upcoming Acconci Studio projects. Noon-6 p.m. Room N52-390. 452-2484.

Trivia Night at the Thirsty Ear
21+ only. ID required. Hosted by Tim Graves. 9-11:30 p.m. The Thirsty Ear Pub.

TUESDAY October 11

Varsity Women's Soccer vs. Wheaton College
4 p.m. Steinbrenner Stadium. 258-5265.

Contra Dance for All
Contra dance is a traditional American form of dancing, directed by a caller and accompanied by exciting live folk music. 8-10:30 p.m. Student Center. 253-FOLK.

WEDNESDAY October 12

Tips for Writing an Excellence Awards nomination - workshop
Talk by Kande Culver of Rewards and Recognition and former members of the selection committee. 12:30-1:30 p.m. Room 16-151. 253-5986.

Heartsafe - First Aid (AHA) Class
Gain the skills to prevent, recognize and provide basic care for injuries and sudden illnesses. $25. 6-9 p.m. Room W20-441.

Interviewing Workshop
This interactive workshop will discuss both on-campus interviews and off-campus interview styles. 6–7:30 p.m. Room 4-145. 253-4733.

Summer PSC Fellows Presentations
Talks by Summer Fellows.7:30-9 p.m. Room 4-231. 258-0691.

THURSDAY October 13

"Graceful Graphs"
Talk by Kourosh Eshghi. Room 4:15–5:15 p.m. Room E40-298. 253-7412.

The Roy A. and Robert L. Kroc Lecture
Talk by Professor Bengt Nordén of Chalmers University of Technology (Sweden). 4-5 p.m. Room 6-120.

"His and Hers: Gender, Consumption and Household Accounting in 18th Century England"
Talk by Amanda Vickery, historian of 18th- and 19th-century British women's history, Royal Holloway, University of London. 4:30-6 p.m. Room E51-275.

Architecture Lecture: "National Library Singapore"
Lecture by Ken Yeang (right). 6:30 p.m. Room 10-250. 253-7791.

FRIDAY October 14

Family Weekend 2005
Families of current MIT students interact with faculty and administrators to experience MIT culture. 9 a.m.–5 p.m. Campus-wide. 253-0708.

"I Am Cuba / Soy Cuba"
Film made in Cuba, 1964. 6 p.m. Room 3-133. 258-8438.

Annual Family Weekend Concert.
MIT Wind Ensemble, MIT Festival Jazz Ensemble, Frederick Harris, Jr. music director. 8 p.m. Kresge Auditorium. 253-2826.

SATURDAY October 15

Varsity Sailing - Brass Rat Regatta
9:30 a.m. Charles River. 258-5265.

MIT Press Bookstore Loading Dock Sale
Oct. 15 and 16. 10 a.m.–7 p.m. E38, 292 Main Street. 253-5249.

Introduction to Self Defense
This Jiu-Jitsu class will cover basic self-defense skills. 3–5 p.m. DuPont Wrestling Room.

SUNDAY October 16

MIT Swapfest
MIT's electronics and ham radio flea market. 9 a.m.–2 p.m. Albany Street Garage. 253-3776.

Xi-Fan Sunday (Parent's Weekend)
Traditional brunch. 11 a.m.–1 p.m. $1. McCormick Dining.

Chantey Sing
Sea music and chanteys with a room full of maritime enthusiasts, professional and amateur singers. 1–4 p.m. MIT Museum.