Volume 49 – Number 12
Wednesday – December 8, 2004

TechTalk
SERVING THE MIT COMMUNITY

High-energy welcome for Hockfield

Sasha Brown
News Office

With an energetic jazz quartet providing the background sound, hundreds of students, faculty and staff streamed into the Stratton Student Center on the afternoon of Dec. 6 to welcome President Susan Hockfield on her first official day.

Some waited up to an hour in a line that, at times snaked halfway around the balcony of the second floor, to get the chance to shake President Hockfield's hand and say a few words of greeting.

"I just wanted the chance to welcome her to MIT," said Krishnan Sriram, a Ph.D. candidate in mechanical engineering who waited in line for a half-hour to speak with Hockfield. "I'd like to get to know her a little and hopefully be able to talk to her in the future sometime about things that are important to graduate students," said Sriram who is involved with the Graduate Student Council.

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Monday was the new president's first day in office. The former Yale provost and noted neuroscientist was elected to the MIT presidency on Aug. 26.

The order of the afternoon was festive. As people laughed and chatted, the Mark Greel Band played Latin-tinged jazz, the sound pumping throughout the Student Center via large speakers on every floor. On the first floor, blue and red flowers and bunches of strategically placed blue balloons added to the party atmosphere.

"People are happy and excited to meet this new president," said Beth O'Sullivan (S.B. 1975), founder of the

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PHOTO / **DONNA COVENEY**

The Logarythms serenade President Susan Hockfield at a reception in her honor held at the Stratton Student Center on her first day in office, Dec. 6.

PSFC fires up novel plasma fusion experiment

Elizabeth Thomson
News Office

A novel experiment that confines high-temperature ionized gas, called plasma, using the strong magnetic fields from a half-ton superconducting ring inside a huge vessel reminiscent of a spaceship has been launched by MIT and Columbia University students and researchers. The experiment, the first of its kind, will test whether nature's way of confining high-temperature gas might lead to a new source of energy for the world.

First results from the Levitated Dipole Experiment (LDX) were presented at a meeting of the American Physical Society the week of Nov. 15. Scientists and students described more than 100 plasma discharges created within the new device, each lasting from five to 10 seconds. X-ray spectroscopy and visible photography recorded spectacular images of the hot, confined plasma and of the dynamics of matter confined by strong magnetic force fields.

A dedication for LDX, the United States' newest approach to nuclear fusion, was held in late October. Fusion energy is advantageous because its hydrogen fuel is practically limitless and the resulting energy would be clean and would not contribute to global warming as does the burning of fossil fuels.

Scientists using the LDX experiment will conduct basic studies of confined high-temperature matter and investigate whether the plasma may someday be used to produce fusion energy on Earth. Fusion energy is the energy source of the sun and stars. At high temperature and pressure, light elements like hydrogen are fused together to make heavier elements, such as helium, in a process that releases large amounts of energy.

Powerful magnets, such as the ring in LDX, provide the magnetic fields needed to initiate, sustain and control the plasma in which fusion occurs. Because the shape of the magnetic force fields determines the properties of the confined plasma, several different fusion research experiments are under way throughout the world, including a second experiment at MIT, the Alcator C-Mod, and the HBT-EP experiment at Columbia University.

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MIT and City of Cambridge craft 40-year tax agreement

Denise Brehm
News Office

MIT and the City of Cambridge announced that they have signed a 40-year agreement that provides long-term tax protection for the city by placing a cap on how much commercial property the university can take off the city's tax rolls in any given year. It includes a 20 percent increase in the base payment in lieu of taxes the university makes annually on tax-exempt property and guarantees a 2.5 percent annual increase in that payment.

The agreement was signed on Friday, Dec. 3, by outgoing MIT president Charles M. Vest and City Manager Robert W. Healy and presented to the City Council Monday evening, Dec. 6, by Healy and John R. Curry, MIT's executive vice president.

"The most important component of this agreement is that it provides the city with a revenue protection program well into the future," Healy said.

The new agreement, which will be in effect for 10 years and is automatically renewable for up to 30 additional years, protects the city's tax base by requiring MIT to pay taxes if the Institute removes commercial property over a certain dollar amount from the tax rolls.

MIT owns 157 tax-exempt acres in Cambridge that are used for educational purposes and 84 acres of commercial land, making a total of 241 acres or 5.29 percent of the city's total land area.

"We at MIT care deeply about the health and future of this city and believe that our investment in property here is a very positive factor for the Cambridge economy," said Vest, who was president of MIT for 14 years, ending his tenure Dec. 5. "I am delighted that we were able to reach an agreement with the city, something we have worked on for several years, before my tenure as president ended."

MIT is the largest taxpayer in the City of Cambridge, paying more than 10 percent of the total taxes levied by the city. In fiscal year 2004, MIT paid $23.5 million in real estate taxes on its 84 acres of commercial property in Cambridge.

"Under law, those properties could be converted to tax-exempt educational use," said Healy. "The agreement insures that the city will not be left hurriedly reacting should MIT decide to invoke its legal right to convert any of its currently taxable property to tax exempt status."

MIT paid nearly $30.7 million to the city in fiscal year 2004—the $23.5 million

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NEWS

DEPARTMENT MERGER PREPARED

Dean of Engineering Thomas Magnanti announced that the departments of ocean and mechanical engineering will merge on Jan. 1.

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10 YEARS FOR W3C

The WWW Consortium celebrated its 10th anniversary with a daylong symposium.

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RESEARCH

HOT FLIES

Biologists have identified a gene that influences the fruit fly's response to heat.

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ARTS

PAINTER'S NONCONFORMITY EXPLORED

Professor Caroline Jones said the work of painter Helen Frankenthaler contains a "Rorschach-type image that can be read as a coded nude."

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TRIFECTA ALUMNA

Architect/lawyer/cellist Stephanie Wingfield returns to campus to perform with the Chamber Music Society.

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NEWS YOU CAN USE

Mileage reimbursement rate increases

Effective Jan. 1, the mileage reimbursement rate at the Institute for the use of private automobiles for business travel will increase from $0.37 to $0.40 based on IRS regulations. Travel ending on or after Jan. 1 will be reimbursed at the new rate. Travel ending on or before Dec. 31 will be reimbursed at the old rate of $0.37.

Credit union seeks candidates

The MIT Federal Credit Union (MITFCU) is looking for members who would like to run for election to its board of directors. An election will be held early in 2005 to fill three open positions on the nine-member board. Directors serve three-year terms.

The credit union is a member-owned, nonprofit financial cooperative dedicated to improving members' lives. Credit unions are the only democratically controlled financial institutions in the United States. Credit union members elect a volunteer board of directors to oversee the work and make decisions with the members' best interest at heart. Unlike banks, credit unions have no stockholders; their directors are not paid. Members of the MITFCU are also the owners of the credit union. Any credit union member who is interested in serving on the MITFCU board of directors, should contact John Matarese at (978) 372-1759 or john@jmatarese.com by Dec. 23.

Two cent copies today

CopyTech is offering Two Cent Copy Day today, Dec. 8, in all three CopyTech locations. Self-service copying on regular 8.5 x 11 white paper will be 2 cents per impression. Employees will be available to help with last minute presentation and thesis work. CopyTech centers are located in Room 11-004, Room E52-045 and on the first floor of the Stratton Student Center.

PHOTO / **DONNA COVENEY**

Multiple choice

Volunteers Judy Halloran (left) and Linda Zahn help freshman Clinton Blackburn decide which chocolate will be the most mouth-watering at MIT's annual event to raise awareness on World AIDS Day. The MIT Women's League organized the Dec. 1 event, which included the chocolate buffet, exhibition of sections of the AIDS Memorial Quilt, a raffle, and displays from several groups to educate people about AIDS/HIV prevention. The six-hour event raised $3,105 to benefit the Names Project Boston. "We were delighted with the outcome," said Sis de Bordenave of the Women's League. "The MIT community is remarkable. People not only turn out for the occasion, but they lend their support by baking and volunteering."

Panel says campus race issue needs airing

Patti Richards
News Office

The MIT Center for Reflective Community Practice hosted a forum to discuss the role of race and racial identity at MIT and explore areas of tension related to racial issues within the Institute. The Nov. 16 forum was held in conjunction with the launch of a new report from the center titled "Vital Difference: The Role of Race in Building Community."

Ceasar McDowell, associate professor of the practice of community development, is director of The MIT Center for Reflective Community Practice (CRCP) and co-author of the new report (see related story), which argues that race—often considered divisive—can actually play a significant role in uniting underserved communities.

McDowell served as moderator of the discussion, which included seven panelists from MIT and provided an opportunity for students, faculty and staff to talk openly about campus racial issues.

Chancellor Phillip Clay, a professor of city planning, set the general tone for the evening by noting that race is too seldom addressed in American society or on college campuses. Clay and other panelists contrasted the current campus mood with their own college experiences in the 1960s, when universities were at the center of the discourse on civil rights.

"In 1964, the topic of race was everywhere—on TV, in books, in the writings of Malcolm X and Nikki Giovanni," said Clay. "It would have been hard to go through that time without having to confront issues of race in some way."

Forty years later, people have a sense that progress has been made, and they often dismiss race as a non-issue. A mindset of "we've been through it, now let's ignore it," is not uncommon on campus, said panelist Karen Nilsson, director of housing.

Yet problems still exist even at MIT, agreed the panelists. Although 90 countries are represented on campus and major outreach efforts are under way to bring more underrepresented minority and other underserved students and faculty here, more attention needs to be paid to race.

Panelists and audience members discussed the prevalence of self-segregation in living groups, social circles and dining rooms as one manifestation of a racial problem.

Panelist Sally Haslanger, associate professor of philosophy, said the problem lies not only in MIT's "white-centric culture," but with the "neural disembodiment" of scientific thought. "In an institution that values the objectivity of science, do we value race or do we deny race and become one of the club? Or do we acknowledge our own race, and not get into the club?" Haslanger said.

Clay acknowledged that some people believe talking about race is at odds with MIT's meritocracy. "They ask: 'How can we introduce anything other than merit into the conversation?'" he said.

For McDowell and those in the CRCP, the hope for MIT lies in the theme of the "Vital Difference" report—racial identity can help, not hinder, community building. "Only if you acknowledge and ground yourself in your own identity can you start to build effective multiracial coalitions," McDowell said.

Focus on racial identity can build cohesiveness

Patti Richards
News Office

Race and racial identity can help build healthy and just communities, according to an MIT report released Nov. 19.

"Vital Difference: The Role of Race in Building Community," written by Ceasar McDowell, associate professor in the department of urban studies and planning, and a team from the Center for Reflective Community Practice at MIT, argues that race, often considered divisive, can actually play a significant role in uniting communities that are struggling against poverty, racism and inadequate services.

"The findings of this report are in many ways counterintuitive. Most people believe that the way to build community is to ignore or downplay race," says McDowell. "'Vital Difference' offers a different and intriguing lens through which we can understand race and community-building at the national and local levels, and even here on the MIT campus."

The report is the result of a multi-year collaboration between the Center for Reflective Community Practice (CRCP) and community organizations in Austin, Texas; Boston; Greensboro, N.C.; Jackson, Miss.; and Los Angeles, all of whose work is aimed explicitly at addressing racial exclusion. All five organizations are engaged in similar endeavors, yet each works in different racial and political contexts and uses different methods to tackle common challenges.

One of the report's goals was to provide insight into the "practitioner knowledge" of individuals and organizations already working to build healthy communities.

"Vital Difference" helps make the case for viewing race as a key component of democracy-building at the community level. Most of the groups featured in the report have come to see racial identity as an organizing asset, a means of building a sense of power, and a critical part of multiracial work. Understanding one's own cultural strengths can be a point of departure for realizing that conditions of societal disparity are shared with others.

As the stories in the report make clear, dealing with race in all of its complexities and difficulties is precisely what enables multiracial coalitions to build the kinds of communities that can bring about systemic change.

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Printed on recycled paper

Publisher
Arthur Jones

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Production
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Tech Talk is published by the News Office on Wednesdays during term time except for most Monday holiday weeks. See Production Schedule at http://web.mit.edu/newsoffice/techtalk-info.html. The News Office is in Room 11-400, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA, 02139-4307.

Postmaster: Send address changes to Mail Services, Building WW15, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139-4307.

Subscribers may call 617-252-1550 or send e-mail to mailsvc@mit.edu.

TechTalk is distributed free to faculty and staff offices and residence halls. It is also available free in the News Office and the Information Center.

Domestic mail subscriptions are $25 per year, non-refundable. Checks should be made payable to MIT and mailed to Business Manager, Room 11-400, MIT, 77 Massachusetts Avenue, Cambridge, MA 02139-4307.

Periodical postage paid at Boston, MA.

Ocean and mechanical engineering merge

Ocean engineering specialization will be offered by mechanical engineering

The Executive Committee of the Corporation approved on Dec. 2 the merger of the departments of ocean engineering and mechanical engineering, effective Jan. 1.

Dean of Engineering Thomas L. Magnanti recommended the merger on Aug. 19, based on the reports of three faculty committees. The merger has been under study for more than two years. Magnanti said the merged department will be called mechanical engineering and will have what he expects to be strong, visible programs in ocean engineering.

"Considerable thought among faculty, department heads, the dean and the provost has been given to how this would be accomplished and how MIT would continue its long and important commitment to ocean engineering, and ultimately to the broader areas of ocean engineering and science," Charles M. Vest, MIT's 15th president, told the MIT faculty at a special faculty meeting Nov. 29 to discuss the merger.

At the faculty meeting, Magnanti noted that the merger deliberations were motivated by many factors including the difficulty in maintaining a small department—with little undergraduate teaching, a lack of a critical mass of faculty in important core areas, and difficulties with sustaining an effective administrative structure—alongside large departments in the School of Engineering.

"Reaching this point has been a long and complex process," Magnanti said, "and I am grateful for the valuable input and support we have received from the faculties of both departments."

The merged department's educational programs will include an undergraduate major with a specialization in ocean engineering and a continuing commitment to several important graduate programs including the Program in Naval Architecture and Construction (currently 13A) and the Joint Program with Woods Hole (currently 13W and 2W).

"Through the merged department, we will now have even more resources to devote to these programs. In addition, both ocean engineering and mechanical engineering faculty are participating in the development of a new strategic plan for the merged department," Magnanti said.

Students currently enrolled in ocean engineering degree programs will be able to continue their programs as planned or, in the case of undergraduates, transfer into a major offered by the merged department that allows for specialization in ocean engineering.

Dean Magnanti reported that ocean engineering will have significant representation in the governance of the merged department. In particular, for at least the next five years, an ocean engineering faculty member will serve as one of two associate heads in the merged department, and the department will create a faculty focus group and a department-based Center in Ocean Engineering. The Institute is also exploring the possibility of creating an interdepartmental Center in Ocean Science and Engineering. The School of Engineering and the Institute have also committed to investment in new financial and faculty resources in the merged department.

In accordance with MIT Policies and Procedures, the president appointed a faculty committee to review the process that lead to Magnanti's recommendation to merge the departments. Steven Tannenbaum, the Underwood-Prescott Professor of Toxicology in the Biological Engineering Division and Department of Chemistry chaired the committee. In its report, the committee said that the "process was thorough and consultative," but recommended that guidelines for reviewing departmental mergers or closures needed some clarification.

In a communication to the Visiting Committees of both departments, Magnanti said, "I am optimistic that both ocean and mechanical engineering will flourish in the merged department."

PHOTO / **DONNA COVENEY**

Senior research scientist and inventor of the World Wide Web, Tim Berners-Lee.

W3C celebrates first 10

Sarah H. Wright
News Office

The World Wide Web Consortium celebrated its 10th anniversary Dec. 1 in Boston's Fairmont Copley Hotel with a day long symposium.

The consortium, known as W3C, is an international group jointly run by the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL) in the U.S., the European Research Consortium for Informatics and Mathematics (ERCIM) in France and Keio University in Japan. Created to develop common protocols and ensure the interoperability of the web, W3C is housed at MIT in the Stata Center.

Tim Berners-Lee, senior research scientist, is the founder of W3C and is its director at CSAIL. Berners-Lee is the author of a 1989 proposal that became the basis of the World Wide Web.

Berners-Lee gave a high-speed history of the web and W3C, zipping through 25 years with evident glee, barely tapping the verbal brake as he enlivened a PowerPoint timeline on the screen behind him.

According to Berners-Lee, it was Vannevar Bush (1890-1974), the first dean of MIT's School of Engineering, who had the "grand vision" we know now as the web. Bush dreamed up the mighty Memex, a "great big microfiche machine for connecting together, with little sensors, one text that could search for destinations in other texts," Berners-Lee said. Bush described Memex in a now-famous essay, "As We May Think," published in July 1945 in The Atlantic Monthly.

Berners-Lee noted individual contributions to the development of the web and highlighted telling details of progress from clunky mainframes and wooden mice to today's sleek little power-packs. He acknowledged he has been mistakenly called the father of the Internet, modestly noting that the Internet, known in 1969 as ARPANET, was "around a long time before the web; e-mail was invented in 1971 and the '@' address was invented in 1972."

MIT's then-president Charles M. Vest focused on the opportunity to "record and reflect on the nature of this invention and its impact; recognize the importance of individual genius and collective action; to celebrate good engineering and to thank Tim Berners-Lee and each other.

"In an age of cynicism, conflict and international tension, thanks for creating and sustaining a cooperative venture for the greater good," Vest said.

AGREEMENT

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in real estate taxes, $6 million in fees, and a $1.2 million contribution in lieu of taxes.

Under the new agreement, MIT will continue to pay the real-estate taxes and fees, and will increase its base payment in lieu of taxes to $1.5 million in FY 2005. This amount will continue to increase in each successive year by 2.5 percent. The Institute has made annual voluntary payments to the city since 1928; the new agreement increases and formalizes that commitment.

"For the first time, these contributions have become binding by written agreement," said Healy.

The base annual payments will total $101.4 million over the 40-year term of the agreement. If MIT exceeds the cap allowance by taking taxable property off the rolls, the Institute will pay the city the equivalent of the tax payment in the year when the property becomes exempt and for each year thereafter. That amount will increase by 3 percent for 39 years. Even if MIT does not exceed the allowance, MIT must pay the city a portion of the taxes previously owed on converted property for the first three years after the property is removed from the tax rolls.

Mutually beneficial relationship

MIT and Cambridge have a long history of working together on issues that are of mutual benefit to both parties, and the Institute is a generator of jobs and revenue in Cambridge, both directly and indirectly.

MIT has contributed to the economic stability of Cambridge over the past 15 years by helping to keep unemployment rates significantly lower in the city than the national and statewide averages. The city's economic strength surpasses all other comparable Massachusetts cities. Of all Massachusetts urbanized centers with populations over 65,000, Cambridge has the highest per capita commercial tax levy, even exceeding Boston.

The Institute has been a catalyst for economic activity in Cambridge. More recently, the Institute has helped to create and sustain a biotechnology boom, particularly in the 02139 postal zip code area.

MIT's "Cambridge First" purchasing policy resulted in purchases of $39.5 million in goods and services from local vendors in FY 2004. In addition, MIT has contributed more than $18.9 million to major public improvement projects in the city over the past five years.

MIT's presence has a very positive effect on the city's bond rating. In its preliminary bond prospectus, the city states that the presence of MIT and Harvard "within the city's borders contributes significantly to its vitality and growth."

"We have been good neighbors with Cambridge since 1916 when the city invited MIT to relocate from Boston to Cambridge. We plan to work closely with the city on mutually beneficial projects for many, many years to come," said former president Charles M. Vest. "There is no place else MIT would rather be."

Seven elected to Physical Society

Seven MIT researchers are among the 215 newly elected fellows of the American Physical Society.

The honor recognizes researchers who have made advances in knowledge through original research and publication or made significant and innovative contributions in the application of physics to science and technology. They may also have made significant contributions to the teaching of physics or service and participation in the activities of the Society.

The new MIT fellows are:

Robert E. Cohen, the St. Laurent Professor of Chemical Engineering, for seminal contributions to the understanding of the morphology and properties of heterogeneous polymers, in particular, pioneering fundamental work on molecular structure of block copolymers and toughening of crystalline polymers.

C. Forbes Dewey, professor of mechanical engineering and bioengineering, for experimental and theoretical studies of high-speed and separated flows, innovations in flow measurement techniques and technology, and the understanding of the biological response of living cells to fluid-mechanical forces.

Jacqueline N. Hewitt, professor of physics, for pioneering investigations of gravitational lenses using radio astronomy, application of gravitational lens studies to cosmology, and leadership in astronomy.

Krishna Rajagopal, associate professor of physics, for seminal contributions to the theory of dense matter, including color-flavor-locked and crystalline phases of color-superconducting quark matter, and critical phenomena in heavy ion collisions.

Caroline Anne Ross, the Merton C. Flemings Career Development Professor of Materials Science and Engineering, for innovative research into the magnetic properties of thin film and nanoscale structures, and for the development of novel lithographic and self-assembly methods for nanostructure fabrication.

Linda E. Sugiyama, a principal research scientist at the Laboratory for Nuclear Science, for contributions to the development of numerical simulation for the study of basic questions in plasma physics and the inter-relationship between the numerical and analytical approaches to plasma theory.

Frank Wilczek, the Herman Feshbach Professor of Physics, for the discovery of asymptotic freedom in the theory of the strong interactions.

PHOTO / **DONNA COVENEY**

President Susan Hockfield in her new office at MIT.

Hockfield takes the long view

Sarah H. Wright
News Office

Susan Hockfield described the first six hours of her first full day as president of MIT as "so far, so terrific. No big surprises except a lovely homemade cake with the Wright brothers' airplane on top."

Hockfield seemed right at home in her new office with its pale marble fireplace, polished bookshelves and view of Killian Court and the Charles River. Currently, the shelves hold family photos and the two tables, flowers. She has moved the presidential desk 90 degrees to the west.

Hockfield has spoken often of the value of collaboration and of community, and she was quick to credit her success today as a scientist and as an administrator, to "fabulous mentors and advisors, lots and lots of them. I always encourage students to find and use as many mentors and advisors as they can," said Hockfield. "The practice of science is so complex, no one person or teacher can do it all."

She singled out her core staff during her six-year tenure as provost and graduate school dean at Yale for praise, noting she had already discerned that same devotion and selflessness in people she'd met at MIT. "I didn't know until I became part of administration how many people facelessly dedicate their lives to students of the Institute," she said.

In her navy blue suit, low matching pumps and striped shirt, Hockfield, a Chicago native, presents an accessible yet businesslike image. She laughs readily and relishes the process of thoughtful response. A question about her hobbies struck her as funny—but how could it not, with a scientific and leadership career, a family and a new Golden Retriever?

"I've been blessed that I have always loved my work," she said.

Warming to the topics of teaching and research, Hockfield said, "I loved being a scientist. I found neuroscience endlessly fascinating. When I got my first job in a lab, I felt I had found the thing I'd always been looking for. I loved working in labs. I loved the hands-on work and the sociology of the people in the lab. Science is about regular failures within the context of knowing you are moving towards success. We persist because we enjoy the elements—the activities—in what we do."

Hockfield, 53, reflected briefly on the history of American science and the promise of American education, with MIT sustaining its leadership role. When she was in grade school, the space race began, catalyzed by Sputnik I, the former-Soviet Union's basketball-sized satellite that circled the Earth in 1957.

"Sputnik was a wake-up call. It raised a sense of enthusiasm for science and math, and gave Americans a compelling interest, a survival interest, in competing with the Russians. I think our nation could use some of that sense of urgency today," she said. "I'd like to see our nation continue to be the fount of ideas for the future of innovation and invention for bettering human life."

Hockfield's vision for MIT is to "play a significant role in reinvigorating science and technology education, communicating what we do to kids in our own nation and around the world," she said.

"The 20th century was the American century. As we embark on the 21st century, it's looking like it will be the science and technology century. It could also be the global century. Either way, MIT should lead the way," she said.

A discreet knock on the office door came; the Associated Press was here to interview the new president. On a shelf just outside Hockfield's office sat the day's little surprise, the white frosted layer cake from the "Institute for Hacks, Tomfoolery and Pranks," complete with an explanatory note.

Seven hours into her first full MIT day, the cake still made Hockfield smile. Never mind how the layers had slid since early morning, so the frosted dome leaned like a heavy eyelid over Building 10. The paper plane, the once-impossible dream of flight, was pointed toward Killian Court, where inauguration will take place next May.

RECEPTION

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Science Club for Girls, a Cambridge-based non-profit that brings women scientists and local public school girls together in after-school science clubs focused on science and technical skills. O'Sullivan wanted an opportunity to introduce Hockfield to the program. "I came out today because I just have enormous respect for her and I am hoping to increase our group's involvement with MIT," O'Sullivan said.

Surrounded by dozens of people, Hockfield received well-wishers in the Catherine Stratton Lounge on the second floor for two hours, from 3:30 to 5:30 p.m. Midway through the afternoon, she was serenaded by the Logarhythms, an all-male a cappella group known for their songs—and their stunts.

Smiling groups of undergraduates posed for pictures with Tim the Beaver, while noshing on the cheese, breads, cookies, brownies, chocolates and soda that were placed on multi-tiered tables scattered throughout each floor.

Tamarleigh Lippegrenfell, publications editor in the Materials Processing Center, said she came out Monday to represent her department. "I guess I just wanted to put the name of our center out there," said Lippegrenfell, as she waited in line for her chance to greet Hockfield.

Lippegrenfell said she liked Hockfield instantly after seeing a photograph of the new president with her family on Aug 26. "Her family looked like such a happy group," she said. "This really is such a great step for the Institution."

Student Advisory Board meets with new president

A group of 23 students is working to make sure that President Susan Hockfield understands the concerns of graduate students and undergraduates.

The Student Advisory Board to MIT's 16th president is a group of 12 graduate students and 11 undergraduates formed in October. More than 110 students applied for positions on the board, according to Barun Singh, president of the Graduate Student Council and a doctoral student in computer science. Students were chosen based on "their passion and enthusiasm for the task at hand," Singh said.

In their applications, students wrote essays detailing some of the changes they would like to see at MIT. Some pointed to programs they liked and wanted to enlarge. Others pointed to areas they felt were lacking. "It was really a combination of things," said Singh, who mentioned academics and housing as two of the topics most commonly addressed.

The new advisory council comes on the heels of last year's student advisory group that helped with the search for a new president.

The group met with Hockfield for the first time on Nov. 29. Singh said Hockfield seemed "very receptive to the idea" of student input.

The student advisory board plans to meet with her three times during January and February. Each meeting will focus on one of three general areas of concern to students: academic, research and professional development; community life and extracurriculars; and global connections, the long-term and strategic planning. Before each meeting, the board will compile a background report for the president.

While many of the students on the board already have ideas about what they would like to see changed at MIT, the board has also been compiling input from other students during open forums like one held on Nov. 30.

"All input is welcome," said Singh. "The ultimate goal is to provide a mechanism for Hockfield to transition into the MIT community in a way that will really allow her to absorb the hopes, aspirations, concerns and issues of the student body and to really understand the MIT culture."

–Sasha Brown

Researchers track non-coding portions of eukaryotic genes

Michelle Nhuch
Broad Institute

By comparing four fungal genomes, researchers from MIT and the Broad Institute have described some of the dynamics of the evolution of introns, the non-coding portions of genes that comprise a large proportion of many genomes.

Introns are found in eukaryotic species, which includes all members of the fungi, plant and animal kingdoms. Although introns were first discovered almost 30 years ago, scientists are still asking basic questions about their role.

The researchers studied fungal genomes that together span 400 million years of evolution from a common ancestor. Their findings, published in the December issue of the Public Library of Science, describe how an increase in introns plays a significant role in eukaryotic evolution.

"Our results provide clues about two fundamental unanswered questions about genome evolution—how introns are gained and how introns are lost," said Chris Burge, the Whitehead Career Development Associate Professor in MIT's Department of Biology.

Introns are one of the basic characteristics of eukaryotic genomes, said James Galagan, a computational biologist at the Broad. "We want to understand what they are doing because they comprise a significant part of our genomic ecosystem," Galagan said.

To paint a more complete picture of intron evolution, the researchers are currently looking at other fungal genomes. With additional data and analysis, they hope to one day apply their whole-genome method to better understand intron evolution in the genomes of higher eukaryotes, including animals and plants.

Also on the study team are Bruce Birren, co-director of the Sequencing and Analysis Program and director of the Microbial Sequencing Center at the Broad; and co-first authors Cydney Nielsen, a graduate student in biology, and Brad Friedman, a graduate student in biology and mathematics.

This research was supported by grants from the National Institutes of Health, National Science Foundation, United States Department of Agriculture and the Burroughs Wellcome Fund.

PHOTO / **DONNA COVENEY**

Assistant professor Paul Garrity (left) and graduate student Mark Rosenzweig have isolated a gene in fruit flies that influences the fly's response to heat.

Some don't like it hot: unraveling the molecular basis of thermotaxis

John Fleischman
American Society for Cell Biology

The songwriter Noel Coward once declared that only mad dogs and Englishmen went out in the midday sun. Now MIT biologists have a third candidate—fruit flies with defects in a gene called dTrpA1.

National stereotypes aside, most living creatures know when they are too hot or too cold and need to move. In biology, it's called thermotactic behavior. But until this new work, no one had a good molecular explanation of how environmental temperature is sensed and how it governs behavior.

If this new role for the fruit fly gene holds up, it will be the first time a temperature-sensing protein has been implicated in mediating thermotaxis in animals.

The research, led by Paul Garrity an assistant professor of biology at MIT, will be presented Dec. 8 at a meeting of the American Society for Cell Biology. Garrity's colleagues are biology graduate students Mark Rosenzweig (first author of the paper) and Timothy Tayler, MIT affiliate Karen Brennan, and Ardem Patapoutian of the Scripps Research Institute and the Genomics Institute of the Novartis Research Foundation.

Knowing what's hot and what's not is vital for living things, as temperature affects behavior, development and physiology. And, of course, temperature above or below a certain range is harmful to many organisms.

To identify the bioactive molecules that control thermotaxis, the researchers chose the celebrated fruit fly, Drosophila melanogaster, for their experimental system, noting that both adults and larvae are known to avoid extreme temperatures. With a new generation hatching every 10 days, the fruit fly is also highly amenable to genetic analysis.

When placed on a temperature gradient generated by heating one half of an agar-covered plastic dish, Drosophila larvae quickly migrated away from the heated region into the cooler zone. Within minutes, few of the larvae were even near the heated zone. However, larvae in which expression of the dTrpA1 protein was greatly reduced by the use of RNA interference (RNAi) didn't seem to notice the heat. Instead, the dTrpA1-deficient larvae ended up randomly distributed between the heated and unheated zones.

This suggests that they either did not sense the difference in temperature along the gradient or that they were unable to properly translate the sensation of temperature into a behavioral response. The MIT researchers suggest that the fruit flies may use dTrpA1 to sense environmental temperature, with the activation of the gene triggering neuronal signaling events that prompt larvae to avoid the heat.

Whatever the connection, say Rosenzweig and Garrity, "Our work demonstrates an essential role for dTrpA1 in thermosensory behavior and begins the characterization of a previously unknown thermosensory circuit in Drosophila." Meantime, the rest of us will thermotax toward the shade.

This work was funded by the National Science Foundation; the National Institutes of Health and the Raymond and Beverly Sackler Foundation, a Whitehead Career Development Professorship.

Magnesium may reverse middle-age memory loss

Magnesium helps build bones, make proteins, release energy stored in muscles and regulate body temperature. In the cover story of the Dec. 2 issue of Neuron, MIT researchers report a possible new role for magnesium: helping maintain memory function in middle age and beyond.

The adult daily nutritional requirement for magnesium, a trace mineral found in foods such as dark green, leafy vegetables, is around 400 mg a day. But studies show that as many as half of all Americans do not consume enough magnesium. Magnesium deficits have been tied to allergies, asthma, attention deficit disorder, anxiety, heart disease, muscle cramps and other conditions.

Associate Professor Guosong Liu and postdoctoral associate Inna Slutsky at MIT's Picower Center for Learning and Memory found that magnesium helps regulate a key brain receptor important for learning and memory. Their work provides evidence that a magnesium deficit may lead to decreased memory and learning ability, while an abundance of magnesium may improve cognitive function.

"Our study shows … maintaining proper magnesium in the cerebrospinal fluid is essential for maintaining the plasticity of synapses," the authors wrote. "Since it is estimated that the majority of American adults consume less than the estimated average requirement of magnesium, it is possible that such a deficit may have detrimental effects … resulting in potential declines in memory function."

Plasticity, or the ability to change, is key to the brain's ability to learn and remember. Loss of plasticity in the hippocampus, where short-term memories are stored, causes the forgetfulness common in older people.

"The important issue is how the plasticity of synapses is regulated physiologically," said Liu, who has appointments in the Department of Biology and Department of Brain and Cognitive Sciences.

FUSION

Continued from Page 1

LDX tackles fusion with a unique approach, taking its cue from nature. The primary confining fields are created by a powerful superconducting ring about the size of a truck tire and weighing more than a half-ton that will ultimately be levitated within a large vacuum chamber. A second superconducting magnet located above the vacuum chamber provides the force necessary to support the weight of the floating coil. The resulting force field resembles the fields of the magnetized planets, such as Earth and Jupiter. Satellites have observed how these fields can confine plasma at hundreds of millions of degrees.

The LDX research team is led by Jay Kesner, senior scientist at MIT's Plasma Science Fusion Center (PSFC), and Michael Mauel, a professor of applied physics at Columbia University who earned his degrees from MIT (S.B. 1978, S.M., Sc.D.).

Kesner and Mauel's colleagues on the experiment include five graduate students (Alex Boxer, Jennifer Ellsworth, Ishtak Karim and Scott Mahar of MIT and Eugenio Oritz of Columbia) and two undergraduates (Austin Roach and Michelle Zimmermann). The team also includes Rick Lations, Phil Michael, Joseph Minervini, Don Strahan and Alex Zhukovsky of the PSFC and other Columbia scientists.

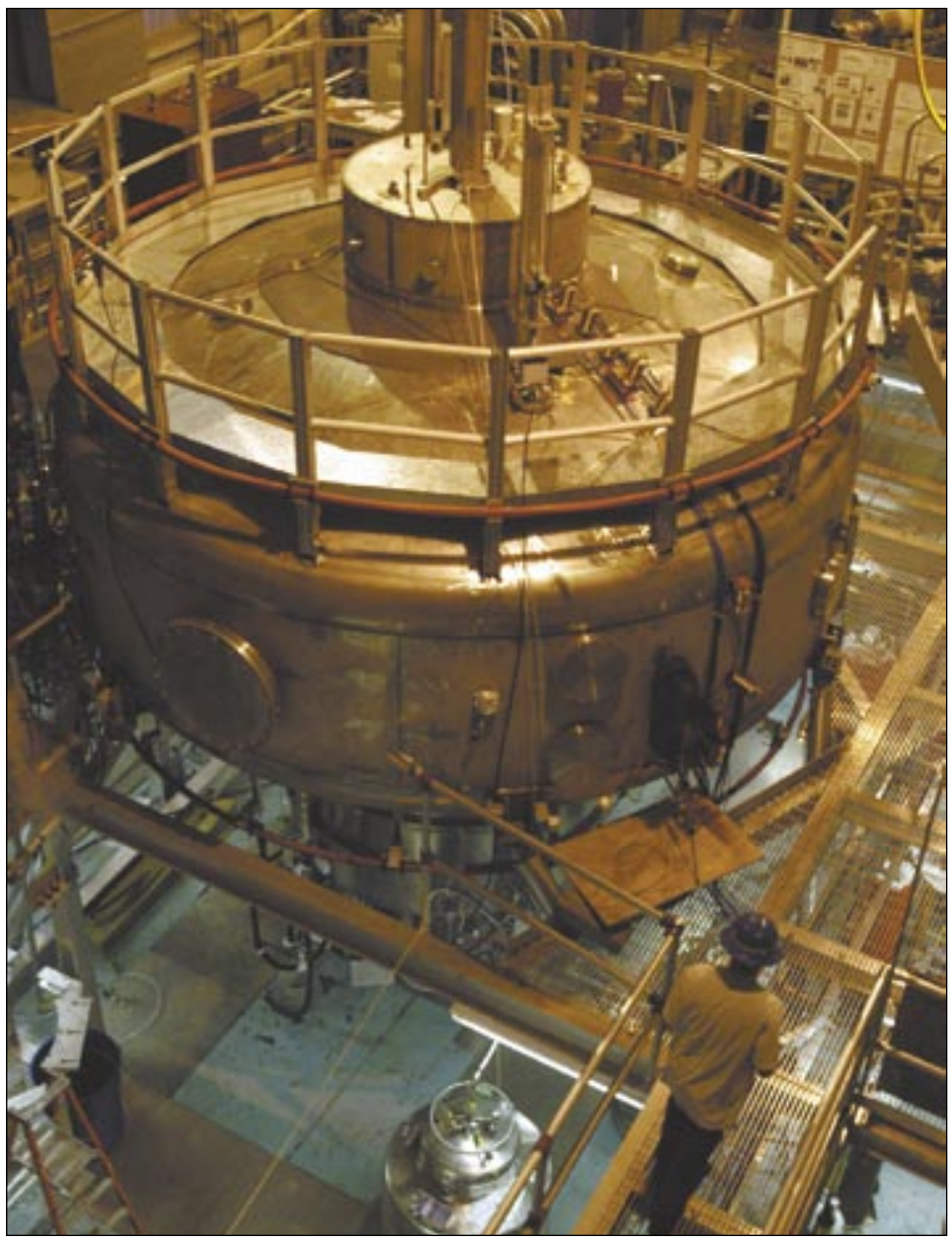


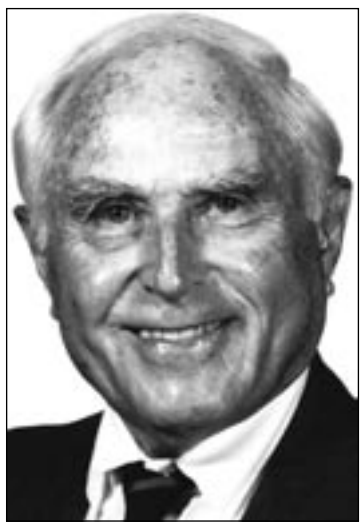
PHOTO / **DONNA COVENEY**

MIT and Columbia University researchers have begun an experiment at the Plasma Fusion and Science Center that could lead to a new source of energy. Key to the work is this huge vessel reminiscent of a spaceship.

Professor Emeritus Shapiro dies at 88

Sasha Brown
News Office

Institute Professor Emeritus Ascher Shapiro of MIT, a pioneer in the field of biomedical engineering and a leader in fluid mechanics research and education, died in his home on Nov. 26 of liver cancer. He was 88.



Ascher Shapiro

In the early 1960s, Shapiro began studying the problems in physiology and medicine that could benefit from an engineering approach, essentially developing the burgeoning field of biomedical engineering. Virtually unheard of at the time, the field is now a major research area.

Collaborating with physiologists, physicians and surgeons, Shapiro contributed to a number of medical advances, among them the intra-aortic balloon for patients with heart conditions, which allows doctors to use far less invasive techniques in treating cardiovascular problems. Shapiro's knowledge of fluid mechanics and engineering was instrumental in the treatment of blood clots, asthma, emphysema and glaucoma.

He grew up in New York City and received the S.B. in 1938 and the Sc.D. in 1946 in mechanical engineering from MIT. During World War II, he was the director of a U.S. Navy laboratory that worked on developing turbine propulsion engines for aircraft-dropped torpedoes.

Starting as a laboratory assistant at MIT in 1938, he was appointed Instructor in 1940, promoted to assistant professor in 1943, associate professor in 1947 and professor in 1952. In 1975, he was named an Institute Professor. Shapiro became chair of the MIT faculty in 1964, but resigned that post in 1965 to become head of the Department of Mechanical Engineering. He headed the department until 1974, when he stepped down to devote himself fully to teaching and research. Shapiro became a professor emeritus in 1986.

For the first 25 years of his career, Shapiro's research was focused primarily on power production, high-speed flight, turbomachinery and propulsion by jet engines and rockets. He was a member of the Lexington Project, which helped to evaluate nuclear-powered aircraft. During that time, he invented a nuclear aircraft-propulsion system. Soon after, he directed the Atomic Energy Commission's Project Dynamo, which evaluated nuclear energy as a potential source of civilian electricity production.

Shapiro had a profound impact on his students. He was "the ultimate educator I'll ever know," alumnus Richard Oman said in a poem about Shapiro. His impact on fluid mechanics and engineering education was worldwide. In the early 1960s, he produced a series of 25 films on fluid dynamics, which have been watched in university classrooms around the world. Now digitized and remastered, the lecture series is still in wide use.

"Producing those films was one of the joys of his life," said longtime friend and colleague, Ronald Probstein, the Ford Professor of Engineering Emeritus in mechanical engineering.

Shapiro made many educational contributions to the Technion-Israel Institute of Technology as a member of the board of governors from 1968 to 1989. He held 13 patents and published many technical articles and several books. His two-volume treatise, "The Dynamics and Thermodynamics of Compressible Fluid Flow," was published in 1953 and 1954. The first volume is still in print today and has been translated into several languages.

He was a member of the American Academy of Arts and Sciences, the National Academy of Sciences, and the National Academy of Engineering.

"He was a very good-humored individual," said Probstein. "He could often be seen in the society pages. He was really at the center of Boston life outside of academia." An avid tennis and squash player, Shapiro also enjoyed dancing and sailing.

Shapiro and his grandson, Jonathan Barlev, now 25, had similar interests and often shared books, according to Shapiro's daughter, Martha Margowsky of Los Angeles. His grandaughter Valery Handel, 15, plays the silver flute her grandfather bought for himself more than 65 years ago.

Shapiro is survived by his third wife, Kathleen, of Jamaica Plain; his daughters, Martha and Mary Handel of Jerusalem, and his son, Peter of Morgantown, W.V., all from his first marriage to Sylvia Charm; his two grandchildren, both of Jerusalem; and three stepchildren in Canada—Scott Larke of Victoria, Leslie Waters of Toronto, and Jennifer Bast of Georgetown.

A memorial service is being planned for next year.

Crisis simulation sharpens business leadership techniques

You don't have to ask twice if Sloan School students want to step in and take charge.

Seventy of them showed up to participate in the "Bosnian Peace-Keeping Force," a two-day, real-time simulation of an international rescue mission designed to develop leadership skills using a fictionalized model of the atrocity that displaced Bosnian refugees in the 1990s.

The simulation is one of more than a dozen leadership workshops offered during the Sloan Innovation Period (SIP) in October, an intense week of leadership training offered at the midpoint of each semester. Regular classes are suspended, and Sloan M.B.A. students enroll in seminars and activities taught by faculty and visiting instructors.

"The course is designed to teach students how to engage in leadership activities during crisis situations," said Deborah Ancona, the Seley Distinguished Professor of Management who chairs the MIT Leadership Center, which was started last spring to develop the next generation of leaders through education, rigorous research, global dialogue and action. "The time pressures, rapidly developing events, dangerous terrains and moving targets are all designed to teach students leadership skills."

In the simulation, the refugees will perish if relief organizations do not quickly locate them and provide assistance. Students break into governmental and non-governmental groups—military, intelligence, relief, rescue, humane and other organizations—which at times work at cross-purposes to achieve organizational goals. Two indigenous groups, the "Lowlanders" and the "Highlanders"—alleged victims and perpetrators in the incident—are part of the scenario.

First-year student Thomas Greene was part of a reconnaissance unit and experienced the frustration of sitting at a roadblock for an hour and a half, along with the joy of finding a refugee and securing a translator. "Up until now, it's been classroom, classroom, classroom," Greene said. "This is a good break from the routine and a great way to learn. The group dynamics are interesting; you get to see how people respond to different situations."

Adam Albrich, a helicopter pilot who flew missions in Bosnia and Afghanistan as an officer with the U.S. Army before coming to Sloan, worked in the control room during the simulation. "The radios, roadblocks, planning, translations and constant changes—everything was very similar to a real emergency rescue operation except that what the Sloan students accomplished in 12 hours would have taken the military a month," Albrich said.

The SIP leadership sessions are part of a set of workshops, courses and other activities developed and offered as part of the MIT Leadership Center, according to Mary Schaefer, executive director of the center. "The center's initiatives closely align leadership and team development with science, engineering and management skills—leveraging the best of MIT—while addressing and solving practical problems affecting society and the economy."

"Courses like this one," said Sloan Dean Richard Schmalensee, "are part of the school's commitment to developing principled, innovative leaders who will improve the world. We are developing and evaluating innovative education approaches while expanding dialogue with global experts and leaders."

Many criteria are used to evaluate the participants' performance during the simulation, including actual mission results. "The group managed to get all of the refugees to safety, but secured only two-thirds of the supplies needed," said Bruce Newsome, a former Wharton professor and originator of the simulation who is now with RAND in Santa Monica, Calif. While the MIT Sloan students were anxious to learn the results, they were equally curious to know how their performance compared with their peers at Wharton. "You did better," said Newsome.

Magnet Lab and Korean institute collaborate on spintronics

The Korea Institute of Science and Technology (KIST) and MIT's Francis Bitter Magnet Laboratory have launched a 10-year program in spintronics, a field that could lead to new ways for storing and communicating information.

Today's electronics are based on the charge of electrons, or the flow of current. But electrons also have spin. "This magnetic property could be used very effectively for storing information and also for communications," said Jagadeesh Moodera, a senior research scientist at the Magnet Lab and the program's principal investigator from MIT.

Enter spintronics, the study of this phenomenon. "In the future we'd like to use spin as well as charge in electronic devices," Moodera said. "This could provide an additional channel of information as well as an additional degree of freedom for designing novel devices." He noted that there has been an enormous interest of late in nano-devices based on spin transport.

Moodera's group has been carrying out cutting-edge research in spintronics for more than 10 years. His counterpart in the KIST-MIT collaboration is Hijung Kim, director of KIST's Nano Spintronics Program.

An initial three-year joint project, "Nanospintronic Science and Devices," will be funded at the rate of $300,000 a year by KIST.

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

Sleigh style Crib and matching bureau/dressing table. Both in great shape. Originally $500 ea. Asking $300 for both. 253-8366.

VEHICLES

1998 Jeep Cherokee Sport, Auto, 4dr, 4WD, 119K. Power locks, doors, mirrors. Cruise control, towing package, well-maintained, runs well. $4,000. Elsa at elsao@mit.edu.

02 Suzuki VL 800 Motorcycle. Under 2K. Mint cond. $5,000/bst. Mark at 978-263-4171 or 978-580-1613 (cell).

1994 Subaru Legacy. 4 Cyl, frt wh. drive. A/C PS/PB, cruise, R/W defog. Power windows, locks, mirrors. Rear spoiler, AM/FM stereo w / cass. New tires, brakes. 45K. $3,600/bst. Dollie or Steve at 781-245-1794.

1994 Ford Escort LX Station Wagon. 4D, 138K, auto, AC, PS. Good running cond., current inspection sticker/registration. $1,200/bst. (KBB: $1,600). 617-964-3607 or demirevs@comcast.net.

1991 Mercedes Benz, 190E 2.3. Leather seats, sunroof, air bag. Looks and drives great. Sporty, luxury car, easy to drive in city. 190K. $2,400. deolives@hotmail.com or 617-661-1395.

HOUSING

Somerville: 8 rm house for rent. $2,100/mo. Off-st. prkng. 7 min. walk to Porter Sq. Hdwd floors, skylights, cathedral ceilings, rooms, porch w/ views of Boston. Pics on Craig's List. Betsy at 617-628-4952 or betsh@rcn.com.

Roslindale: Condo sublet avail. Jan. and Feb. 2005. Near commuter rail. 2 BR, 1,100 sq ft. $1,000/mo. Heat and telephone not included. Includes parking and free wireless DSL. benbr@mit.edu or 452-2085.

Cambridge: 10 min. walk to MIT. 2 completely furnished, totally equipped apartments, 2 BR, $1,550. Large studio with separate sleeping area, $975. Laundry, enclosed yard. Johnatale@verizon.net.

Natick: Sunny/clean 2 floor, 2BR apt. Walk to train. Heat and hot water included. $1,200. 508-650-1096.

Visiting faculty/post-docs: furnished room w/ kitchen/laundry privileges, linens, all utilities, wireless and cable, walking distance of MIT. New, bright, quiet. International. Conservation oriented. References. $950-$1000/mo. Short-term: $250/week. 617-625-9839.

Newly renovated apt for rent. 5BR, 2Bath, 2fls, W/D, DW, enclosed patio. Kenmore Sq. $3200/mo. Parking available. 617-642-8592.

WANTED

Dining room table with or without chairs. Large enough to seat 6-8. Round or oval shape preferred. Anne at 253-0292.

STUDENT POSITIONS

Positions for students with work-study eligibility.

Zoo New England seeks work study students to help in offices, guest services, and with animals. www.zoonewengland.org/involve/jobop.shtml for job listings, descriptions, salaries.

Action for Boston Community Development job openings: data entry, teaching. Full year and summer. Pay dependent on job and hours. www.bostonabcd.org or 617-357-6000 or hr@bostonabcd.org.

Concert features versatile alumna

Lynn Heinemann
Office of the Arts

So an architect, a lawyer and a cellist converged on the stage one evening.

No, it's not the setup for a joke. It's a concert, performed by one person who happens to be an architect, a lawyer and an accomplished cellist—alumna Stephanie Wingfield, who returns to campus Dec. 11 to perform with the MIT Chamber Music Society at 3 p.m. in Killian Hall.

Wingfield earned the S.B. in 1982 and the M.Arch. in 1987 and played cello with the Bach Society, the Chamber Players and the Symphony Orchestra when she was at MIT. Several years later she went to law school at Northeastern University. She now works for Ropes & Gray in Boston.

Her performance will feature Beethoven's Trio for clarinet, cello and piano, Op. 11; Nino Rota's Trio for clarinet, cello and piano (1973); Rebecca Clarke's Prelude, Allegro and Pastorale for viola and clarinet; and Brahms' Trio for clarinet, cello and piano, Op. 114 with Sylvain Bouix on clarinet, Karen Freeman on viola, and Hojae Lee on piano.

The cello wasn't Wingfield's first choice of instruments in junior high, but "by the time they got to the W's, all the violins were gone," she recalls. She tried the viola for about a month but didn't like the chin/hand position. The switch to the cello proved successful and her parents bought her a "real cello" about a year later.

Although she had planned to become a high school music teacher, she changed her mind after being recruited by MIT. Music played a big role in her collegiate choice—between Harvard and MIT. "There was no comparison, as far as music performance," she said. "At the time, MIT was definitely stronger."

Once at MIT, the program did not disappoint her. "The standard of playing was incredibly high considering most people did not plan to become professionals." The faculty, "especially Marcus Thompson," were always very helpful and supportive, said Wingfield.

Wingfield said also that she loved studying architecture at MIT. But after practicing for about 10 years, her interests veered toward project management, which gave her contact with attorneys. "That eventually caused me to think I'd like to add what they do to my set of skills," she said.

Wingfield lives in Roslindale and plays with the Boston Philharmonic and chamber orchestras. This year, she returned to the MIT Symphony Orchestra.

PHOTO / **THOMAS MAXISCH**

Cellist Stephanie Wingfield performs with the MIT Symphony Orchestra.

Jones discusses artist's rebellious work

Sarah H. Wright
News Office

An MIT art historian's new research in art criticism suggests that abstract expressionist painter Helen Frankenthaler, one of America's most famous female artists, skillfully produced large-scale, sought-after works that not only conformed to the rules of abstraction but also contained clear, sensual elements of rebellion against them.

According to Caroline Jones, associate professor of art history, Frankenthaler's painterly signs of protest lasted barely 10 years—not long, by the standard of her remarkably stable, five-decade career—but their visible presence in her 1950s canvases presaged feminist performance artists such as Yoko Ono and Carolee Schneemann working in the 1960s and 1970s.

> *How can certain objects of art be in view and remain invisible?*
>
> **Caroline Jones**
> Associate Professor of Art History

Jones presented a talk, "Helen Frankenthaler and Clement Greenberg: The Painter, the Critic, her Pictures, his Words," sponsored by MIT's Program in Women's Studies, on Nov. 19 in Room 14E-304.

In her discussion of Frankenthaler's work, Jones noted how figurative elements—distinct references to female bodies, whole or in part, and to female and male sexuality—are all hidden in plain sight in the artist's early paintings.

Jones used slides to contrast Frankenthaler's paintings that conformed fully to abstraction, such as "Mountains and Sea" (1952), with those that did not, including "Scene with Nude" (1952) and "Arcadia" (1962), a seven-foot-high painting that contains a "Rorschach-type image that can be read as a coded nude," said Jones.

The art-historical question is: how could these clear signs go unremarked and unresearched? "How can certain objects of art be in view and remain invisible?" Jones asked at the outset of her hour-long presentation.

For Jones, currently editing galleys of her new book, "Eyesight Alone: Clement Greenberg's Modernism and the Bureaucratization of the Senses," the answer lies partly in the relationship between Frankenthaler, 76, and Clement Greenberg (1909-1994), an art critic and cultural mega-star whose presence defined the 1950s and 1960s art world. In postwar America, if a work didn't fit in the "Greenbergian universe," it was not seen as art.

Frankenthaler was an intimate of Greenberg's during the 1950s, Jones noted, yet he never reviewed her paintings in print. (He wrote for Partisan Review and The Nation.) Never mind that "Mountains and Sea" blew the metaphorical socks off painters Kenneth Noland and Morris Louis when they visited Frankenthaler's studio. That breakthrough painting just relegated her to the role of "distant matriarch," said Jones. The Greenbergian regime was all male.

Yet there's that nagging question, said Jones: Were the more subversive elements of Frankenthaler's work visible to the feminist avant-garde then emerging in New York?

"Does a work have to occur as text before it is visible?" Jones asked. In a commentary-mad culture, what happens to the un-commented?

Jones acknowledged that Frankenthaler was in a good position to find out. An affluent, highly cultured New Yorker, she had no need to get a day job to support her painting career. Her mainstream, "Greenbergian" works were always successful. Eventually, their steady loveliness straddled the art market's "contradictory imperatives of absolute originality and a repeatable signature style," said Jones. Her signature stain paintings hang in major museums and sell for six figures at auction.

Frankenthaler's bargain

Jones cautioned her lunch-hour audience not to attribute feminist politics to Frankenthaler herself, despite the evidence of figurative elements in her early work. The artist herself had no fringy, feminist intentions, no matter what later work she may have inspired, Jones said.

"Frankenthaler closed herself off from those sensibilities. After 1967, she stopped doing paintings like 'Arcadia.' She had to choose a strategy: either enter the patriarchy and deal with its rules or engage with the female body and all of its issues and enter the avant-garde," Jones said.

Jones noted during the question-and-answer session following her talk that "Frankenthaler's bargain" was a choice as "old as culture itself." Jones said she hopes to provoke an "empathetic understanding of Frankenthaler's bargain by situating a study of the artist in a book about the most powerful critic of the 20th century."

Artifacts become art–slide rules and turntables at LVAC

In conjunction with Cerith Wyn Evans' installation, "Thoughts unsaid, now forgotten…," the List Visual Arts Center will hold a special discussion of the "Slide Rule Man," 1960s radio broadcasting technologies and their place in MIT's cultural heritage. "MIT history night" has been scheduled for this Friday, Dec. 10 at 6 p.m. in Building E15.

"The Slide Rule Man" is an MIT audio recording from the 1960s about a man who traveled among science-based schools inscribing students' names on their slide rules for 35 cents. That recording is included in Wyn Evans' installation that also includes "WMBR Radio Station," an original 1960s wood-paneled broadcast studio from MIT's student-run radio station, then known as WTBS. The major themes of Wyn Evans' work—information, poetry, art, science and communication—are all incorporated in these relics, which Wyn Evans uses to investigate the aesthetics common to scientific and artistic vision.

List Curator Bill Arning will lead an evening of anecdotes with Martin Klein (S.B. 1962), former president and founder of Klein Associates, Inc. of Salem, N.H., who created the original recording of "The Slide Rule Man," and Ken Avery, a Ph.D. candidate in materials science and engineering, the current general manager for WMBR radio.

▶ ARTS NEWS

The cover of the Dec. 6 issue of Sports Illustrated paying tribute to the 2004 Boston Red Sox was designed by alumnus **Robert Silvers (S.M. 1996)**. While at MIT, the Media Arts and Sciences graduate developed a computer-aided technique that creates mosaics out of individual photographs. Currently president and CEO of Runaway Technology, Silvers used 2,000 photos from the magazine to create an image of the team's logo for the cover. "Believe me," said the Red Sox fan and Massachusetts resident, "when I got the call from SI, it was not lost on me that this was my team."

"Watermarks," a documentary by **Yaron Zilberman** (S.B. and S.M. 1994) won both an award and a rare standing ovation at the Boston Jewish Film Festival in November. The film, which won the Audience Award for Best Documentary Feature, tells the story of seven Jewish women athletes who had expected to compete in the 1936 Olympics, but were forced to flee their native Austria when Hitler annexed the country in 1938. Today the women are in their 80s and scattered around the world. The film will open theatrically in New York City on Jan. 24, 2005 at the Quad Theater and in Boston on Feb. 18 at the Coolidge Corner Theater.

Dante Anzolini, associate professor of music, is one of eight conductors selected from a pool of more than 200 to participate in the American Symphony Orchestra League Conductor Preview event in Jacksonville, Fla. March 22-23, 2005. Anzolini, music director of the MIT Symphony and chamber orchestras, was selected by a national advisory panel. Each conductor will work with the Jacksonville Symphony Orchestra for approximately one hour to showcase his or her skills.

Frederick Harris Jr., a lecturer in music and director of MIT's Wind Ensemble, has written an essay included in a brochure/CD issued in honor of Stanislaw Skrowaczewski, the 2004 distinguished artist of the McKnight Foundation in Minneapolis. Skrowaczewski, a conductor for nearly 70 years and a composer for nearly 75, was maestro of the Minnesota Orchestra (1960-1979) and the Hallé Orchestra in Manchester, England (1984-1991) and is the subject of an upcoming biography by Harris. "In an age when popularity and commercialism increasingly dominate our airwaves and concert halls, Skrowaczewski remains a beacon of what it means to be a pure artist," wrote Harris in his essay titled, "A Lifelong Love Affair with Music."

One of the many perks of being a student, staff or faculty member at MIT is free access to Boston's **Museum of Fine Arts**.

Students can enjoy the MFA's regular exhibitions by presenting their student ID. They can purchase discounted tickets to special exhibitions, including the highly acclaimed **"Art Deco: 1910-1939"** (through Jan. 9), for a special rate of $7 (full-price admission is $22) on weekday afternoons. They can also get reduced-priced tickets to the museum's films, lectures and concerts, and a 10 percent discount in the Museum Shop.

MIT staff members can borrow one of eight membership passes to the museum for daily or weekend use. Reservations are accepted only 24 hours in advance. Call 253-4003 to reserve.

MIT EVENT HIGHLIGHTS DECEMBER 8 - 12

Science/ Technology · Performance · Architecture/ Planning · Humanities

Music · Exhibit · Reading · Special Interest

Business/ Money · Film · Sports · Featured Event

Rhythm from Rambax MIT

The Senegalese drum ensemble Rambax MIT, featuring master drummer Lamine Touré, will give a free performance at 9 p.m. in Lobdell Dining Hall on Saturday, Dec. 11.

WEDNESDAY December 8

SAA Holiday Ceramics Sale
Student Art Association's annual event. Dec. 8-9. 9am-4pm. Lobby 10. 253-7019.

Verizon Wireless
Cellular service provider answers questions for MIT community. Dec. 8. 11am-2pm. Room E19-732.

Medical Devices - Case Presentation
Dr. William J. Heetderks, National Institute of Biomedical Imaging & Bioengineering. Free for students, $20 for MIT Enterprise Forum of Cambridge, Inc. members, $30 for non-members. 5:30-8:30pm. Kirsch Auditorium. 253-8240.

"The Apple"
2000 Iranian film. 6pm. Room 3-133. 258-8438.

THURSDAY December 9

Participatory Simulations and Augmented Reality
Eric Klopfer talk on using handheld games and simulations in education. 1:30pm. Room 4-231. 253-0115.

Hi-Tech Approaches to Low-Tech Threats
Ekaterina Drozdova, 2003-04 Science Fellow at Stanford University, speaks about counter-terrorist technology strategies. 1pm. E38-6th floor conference room. 452-2542.

"How to Succeed in Business Without Really Trying"
Musical Theatre Guild production. Dec. 9-11. $10, $8 MIT community, seniors, and students; $6 MIT/Wellesley students. 8pm. 2pm on Dec 5. Sala de Puerto Rico. 253-6294.

SEED Academy Final Presentations
See Editor's Choice.

FRIDAY December 10

MIT Gardeners Annual Holiday Greens Sale
Holiday wreaths, boxwood trees, and holiday centerpieces for sale in Lobby 10. 10am-2pm.

"The Clipper Ship Era"
Exhibit focuses on the design, construction and speed of the ships and life on board. 10am-5pm. MIT Museum. 253-4444.

List Visual Arts Center Special Gallery Tour: MIT History Night
An evening of anecdotes on the "Slide Rule Man" and experimental radio at MIT with Martin Klein, Bill Arning, and Ken Avery. 6pm. List Center (E15). 253-4680.

Weekly Anime Screening
MIT Anime Club presents the best of Japanese animation. 7pm. Room 6-120.

SATURDAY December 11

MIT Chamber Music Society Alumnae Concert
Stephanie Wingfield, cello; Sylvain Bouix, clarinet; Karen Freeman, viola; and Hojae Lee, piano. 3pm. Killian Hall. 253-9800.

MIT Logarhythms Winter Concert
A cappella showcase featuring the Logs as well as Boston University's Terpsichore. 8-10pm. Kresge Auditorium. 781 640-2330.

Rambax MIT
Senegalese drum ensemble featuring master drummer Lamine Touré. 9pm. Lobdell. 253-9800.

Winter Formal
Seasonal celebration with the MIT Ballroom Dance Team. $6 students, $10 general. 7:30-11pm. Morss Hall (Walker Memorial).

SUNDAY December 12

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

MIT Women's Chorale Holiday Concert
Nancy Kushlan Wanger, director; Atsuko Ashida, accompanist. Works by Faure, Holst, Mendelssohn, Kodaly, songs from Japan and holiday songs. 3pm. Killian Hall. 484-8187.

Late-Night Brunch
The last study break before finals for undergraduates. MIT Police Sgt. Cheryl Vossmer, faculty and administrative "celebrities" will serve a late brunch to students. 10-11:30pm. Lobdell Dining Hall. 253-6786.

International Folk Dancing (participatory)
International folk dancing. 8-11pm. Lobby 13.

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

SEED ACADEMY PRESENTATIONS
Dec. 9

Local high school students present their projects in civil engineering, chemical engineering and computer science. 253-5063.

Kresge Little Theatre

6:30–8:30 p.m.

CHAMBER MUSIC SOCIETY CONCERT
Dec. 11

Stephanie Wingfield on cello, with Sylvain Bouix, clarinet, Karen Freeman, viola and Hojae Lee, piano.

Killian Hall

3 p.m.

LATE-NIGHT BRUNCH
Dec. 12

MIT Police Sgt. Cheryl Vossmer, faculty and administrative "celebrities" will be your waitpersons. Bring a student ID, please. 253-6786.

Lobdell Dining Hall

10–11:30 p.m.

MIT EVENT HIGHLIGHTS DECEMBER 13 - 19

MONDAY December 13

December Object of the Month
William Barton Rogers' Wedding Trip Diary, 1849. Hallway across from 14N-118. 253-5136.

"The Art of Structural Design: A Swiss Legacy"
The MIT Museum celebrates the contributions of a group of highly influential Swiss bridge engineers. Room 10-105. 9:30am-5pm. 253-4444.

"The Traveling Magazine Table"
An assortment of rarely circulated local and international magazines. Noon-6pm. Room N52-390. 452-2484.

CBE/Biology Seminar
Talk by Maurice Fox, Department of Biology. Noon-1pm. Room 68-181. 258-7514.

TUESDAY December 14

Meet the Graduate Student Council Vice President
Come discuss the pursuit of graduate life at MIT with Hector Hernandez, GSC VP. 10-11am. Bosworths Café.

Rare and Special Books at MIT
Exhibit about De re metallica libri XII, by Georgius Agricola. 10am-4pm. Room 14N-118. 253-5136.

Contra Dance for All
Dancing with live folk music. $3 non-MIT/Wellesley students, $5 general. 8-10:30pm. Lobdell. Free for MIT and Wellesley students. 253-FOLK.

WEDNESDAY December 15

"Visualizing Physics: Transforming Science Learning at MIT"
Get an insider's view of how MIT is redesigning the way it teaches physics, through Feb. 13. 10am-5pm. MIT Museum. 253-4444.

Artist Behind the Desk
Reading by poet Karyn Crispo Jones, administrative assistant, Department of Materials Science and Engineering. Noon-1pm. Room 14E-304. 253-9821.

Object Lesson: Amazing Bubbles
Learn about MIT Professor Emeritus Irwin Pless' experience helping to design one of the first bubble chambers. Noon-1pm. MIT Museum. 253-4444.

Israeli Folk Dancing (participatory)
Israeli Folk Dancing. 8-11pm. Lobby 13. 484-3267.

THURSDAY December 16

"The Eight: Reindeer Monologues"
MIT Community Players' production of play by Jeff Goode. $10, $8 MIT community, other students, senior citizens, $6 MIT/Wellesley students. Dec. 16-18. 8pm except 2pm on Dec 18. Kresge Little Theater. 253-2530.

Karaoke Night at the Thirsty Ear
Must be over 21. Proper ID required. 8- 11pm. The Thirsty Ear Pub. 258-9754.

FRIDAY December 17

"Body Parts: A Self-Portrait by John Coplans"
Series of 26 large-scale, fragmented self-portraits. Noon-8pm. List Visual Arts Center. 253-4680.

Plasma Science and Fusion Center Seminar
Randy Wilson, Princeton Plasma Physics Laboratory, talks on power absorption during high harmonic fast wave heating on NSTX. 4-5pm. Room NW17-218. 253-8101.

List Visual Arts Center Gallery Talk
Led by curator Bill Arning. 6pm. List Center. 253-4680.

Weekly Anime Screening
MIT Anime Club presents the best of Japanese animation. 7pm. Room 6-120.

SATURDAY December 18

"Cerith Wyn Evans: Thoughts unsaid, now forgotten"
Cerith Wyn Evans' concurrent exhibitions at the MIT and the Museum of Fine Arts Boston. Noon-6pm. List Visual Arts Center. 253-4680.

"Yael Bartana: Three Works"
Exhibit by Israeli artist Yael Bartana. Noon-6pm. List Visual Arts Center. 253-4680.

For PhD's: Manager, Researcher or Professor?
Professor Lloyd Baird talks about the differences among the roles of manager, researcher and professor. 3-4:30pm. Room 6-120. 253-4733.

Christmas Dinner
Celebrate Christmas the Buddhist way. Sponsored by the Sri Lankan Students' Association. 7pm. McCormick Penthouse. 225-6464.

SUNDAY December 19

"Iquarium"
A virtual fluid flow display. Hart Nautical Gallery. 9am-8pm. 253-5942.

Dim Sum Cultural Event
Noon-2pm. Eastgate Penthouse.

International Folk Dancing (participatory)
8-11pm. Lobdell Dining Hall. 253-FOLK.