Yeast tackles fibers linked to Alzheimer's disease

David Cameron
Whitehead Institute

Amyloid fibers—those clumps of plaque-like proteins that clog up the brains of Alzheimer's patients—have perplexed scientists with their robust structures. Researchers don't yet have a way to assail these resilient molecules. Now a team from MIT and the Whitehead Institute for Biomedical Research reports that yeast may succeed where scientists have not.

In a study published online this week in the journal Science, the researchers describe a natural biological process by which yeast cells dismantle amyloid fibers.

“These proteins are remarkably stable,” said Susan Lindquist, director of the Whitehead Institute, an MIT professor of biology and lead researcher on the project. “This is the first time that anyone has found anything that can catalytically take apart an amyloid fiber. Although the fibers are not necessarily the cause of Alzheimer’s, they are associated with it and with many other neurological conditions.

The finding follows years of study on a yeast protein called Sup35, which helps cells translate genetic information into strings of amino acids, the building blocks of protein molecules. Sometimes Sup35 suddenly forms amyloid fibers similar to those found in Alzheimer’s patients. In yeast, however, this doesn’t kill the cell. Rather, it is part of the cell’s normal biology, changing the types of proteins that the cell makes—changes that can sometimes be beneficial.

Through the unanimously adopted resolution, the faculty also asks the provost to “provide guidance and direction as requested by the departments, including examples of best practices around these goals.”

Annual reports measuring the progress of the recruitment process—including the recruitment of women—are anticipated by the faculty, the Faculty Policy Committee (FPC) and the Council on Faculty Diversity, by school, department and laboratory, according to terms of the resolution.

In a detailed explanation of the FPC report before the vote, Professor Rafael Bras, chair of the faculty, provided faculty and undergraduate statistics over the years at MIT.

For example, of the current 2,205 undergraduates and graduate students are scheduled to receive 1,144 bachelor’s degrees, 1,161 master’s, 211 doctoral and 10 engineer degrees at MIT’s 138th Commencement on Friday, June 4 on Killian Court. Elias A. Zerhouni, director of the National Institutes of Health, will deliver the principal address. President Charles M. Vest will charge the graduates.

The faculty meeting was called to order by Rafael Bras, chair of the faculty, and Maria Hidalgo, provost of the Class of 2004, who will present the class gift. The Rev. Robert M. Randolph, senior associate dean for students at MIT and an affiliate minister at Harvard University’s Memorial Church, will deliver the invocation.

Since becoming its 15th director in May 2002, Zerhouni has initiated a new research vision for the NIH, focusing the attention of the biomedical research community on new pathways of discovery, research teams for the future and reengineering the clinical research enterprise. **See COMMENCEMENT**

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**NEWS**

**CORPORATE CULTURE PLAYS ROLE**

A new project looks at the impact on supply chains of sudden disruptions such as terrorist attacks or natural disasters.

**RANDOM DINNER GUESTS**

A graduate student invites 300 to dine with her.

**PEOPLE**

**KILLIAN GOES TO KETTERLE**

Wolfgang Ketterle is selected as the next Killian Faculty Achievement Award winner.

**HITTING MACADAM WITH ADAM**

A student is making a cross-country bike trek to raise money for FDNY Widow’s and Children’s Fund.

**CANCER RESEARCH HONORED**

Robert Langer receives the Kettering Prize for his work on drug delivery systems for treating cancer.

**AWARDS PAGES**

MIT Tech Talk lists the names of the many students, faculty and staff who received awards this year.

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**DIPLOMAS AND CAMPUS SET FOR THE BIG DAY**

About 2,205 undergraduates and graduate students are scheduled to receive 1,144 bachelor's degrees, 1,161 master's, 211 doctoral and 10 engineer degrees at MIT’s 138th Commencement on Friday, June 4 on Killian Court.

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**Vegetable**

Rhododendrons in bloom are dressing up the campus for Friday's Commencement exercises.
Why are some companies much better at dealing with sudden supply chain disruptions? A research project at MIT's Center for Transportation and Logistics is studying the impact of terrorism on supply chains and identifying what companies can do to be resilient when disaster strikes.

Supply chains can be thrown into disarray for many reasons. A severe storm can delay urgently needed raw materials. A major dock strike can halt the movement of goods. Then there are low-probability, high-impact incidents such as an earthquake or terrorist attack.

“Supply chains could be designed to be more resilient to the sorts of events that could ensure that security is part of their corporate cultures.”

Nokia was able to recover quickly because part of its corporate culture is to communicate bad news quickly through out the company. “The company is not to hide or delay negative information, the company concerned is generally slower to react when treated the unexpected,” Sheriff said.

Resilient companies also are prepared organizational for supply chain interruptions. Part of the Nokia response was to redesign its product so components from other sources could be used. That required quickly calling across-functional teams of managers into action to make the necessary changes.

“Companies can use vulnerability maps to help them assess their supply chain,” said Yossi Sheffi, professor of civil and environmental engineering and head of the project.

For example, a few years ago the production of computer motherboards increased so much that one supplier of major customer, cell phone manufacturer Nokia, reacted quickly and found alternative sources of the chips. Competitor Ericsson had much slower to react and eventually exited the cell phone business.

Nokia had been through several supply chain disruptions. In 1998, 14 applied and 50 percent admitted in 2000, 16 applied and 36 percent admitted in 2000; 221 applied and 27 percent admitted in 2001. The proportion of underrepresented minorities on the MIT faculty is just under 5 percent.

Other business

A proposal for the establishment of an S.B. degree in archaeology and materials science (SAC) was presented by professors Mark Schuster and Sam Allen. The program was conducted as an experimental program for five years as required by the Committee on Undergraduate Program (CUP). CUP and the FPC have now voted in favor of establishing it as a permanent undergraduate degree program in the Department of Materials Science and Engineering. Schuster said that the degree programs in materials science that combines the humanities and sciences.

‘It integrates architecture, archaeology, geology and materials science,’ said Allen. ‘No other degree program in the U.S. is comparable.’ The faculty will vote on the proposal at its September meeting.

Chancellor Phillips Clay gave the annual report of the B.O.T. Task Force regarding efforts to implement the 1996 faculty vote regarding the exclusion of lesbian, gay, transgender and transsexual employees from participation in the B.O.T. While no shift in national policy has occurred and no appropriate court case been found to allow MIT participation in challenging the federal government in that regard, several campus initiatives have seen success.

MIT has become a more welcoming environment for LBGT people, Clay said, as evidenced by greater atten-

Aero/auto honor society resurrected

Two seniors in the Department of Aeronautics and Astronautics have resurrected the Institute’s Chapter of Sigma Gamma Tau, the national academic-ic honors society for students of aeronautics and astronautics. Anna Mracek and Timothee de Mier-
rwy worked with Professor Paul Lagace to revive the MIT chapter of the 53-year-old honor society, which lapsed in the late 1990s.

Students selected for membership must promise to visit the top of their class and must be likely to make significant advances in their profession.”

As an academic honors society, Sigma Gamma Tau membership does inspire respect from people in the field,” chapter chairman continued. The opportunities for leadership and interaction with the faculty will definitely be an asset to members,” said Mracek, president of the chapter. “Additionally, we are working to build a bridge between the undergraduate and graduate community, which is one of the great advantages of the graduate application process.”

The SGT has already participated in two community service projects in partnership with other campus groups, and will provide community and support staff at the Science Expo, and as teach-ers and mentors for the Mars Society’s Boy Scout Space Exploration Day—according to Mracek, who will remain at MIT as a graduate student.

Membership roster

MIT members are seniors Douglas Allaire, Julie Arnold, David Broniatowski (graduate liaison of-fofice), Timothee de Mierry, Jonathan Monack, Anna Mracek (president) and David Quattrocchi; and graduate students Anne Murray, Chao Shao, Thomas Coffee, Shunan Dong, Finale Doshi, Nicholas Hof, Elizabeth Jordan (vice president), JoHanna Prybylowics, Emily Schwartz, and Najima Reza (secu-
rinig secretary).

Sigma Gamma Tau was founded at Purdue Uni-

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Dining with strangers shows promise

Denise Brehm

Random dinner invitation from stranger could lead to dining and social experience. Fortune cookie or MIT fact?

This winter and spring, it became a fact when randomly generated graduate students were invited to dinner by Alice Morss, chair of the Committee on Student Life, as a member of the Committee on Student Life. The idea for the dinners sprang from that committee and was patterned after Professor Samuel "Jay" Keyser's Random Faculty Dinners. The plan is to get graduate students out of their labs and living rooms and into a social situation with grad students from other departments, and at the same time provide them access to administrators who can improve the grad school experience.

It is important to give people the opportunity to enjoy their time in graduate school,” said Morris. “You can’t force them, but you can provide the opportunity.”

Judging from survey responses, most of the students appreciated the opportunity. “It was a great event.” “Fun.” “I’m glad I went.” “It was nice to meet new people.” An “informal atmosphere.” “Should happen more often.”

Morss is also a member of the committee that selects the projects, the committee looks for original ideas for small to medium-sized events that bring together students who normally wouldn’t interact. The panel is particularly interested in projects that serve underrepresented groups such as international students or students with families. The committee hopes to provide seed funding to launch projects that can obtain future funding elsewhere for continuation.

Mors’ $4,000 grant provided most of the funding for her dinners. Roughly 25 students attended each (a 25 percent acceptance rate on her invitations) along with five or six administrators. With the success of these first three random dinners, she hopes to find more permanent funding to establish the get-togethers as an MIT tradition.

Back in the fall, the first event involved a speaker to encourage discussion around that theme after the meal. For instance, Stephen Immennauer, senior associate dean for student life and executive director of Enterprise Services, led a discussion at the February dinner about the types of businesses and services that graduate students might like to see spring up along Massachusetts Avenue between MIT and Central Square.

The Graduate Student Life grants are just one aspect of a new emphasis on improving graduate student community at MIT, which sprang from the 1988 report of the Task Force on Student Life and Learning. As part of its ongoing initiative, the GSO is gathering input from graduate students through surveys and advisory committees to learn how to improve the graduate student experience at MIT.

A sampling of other Graduate Student Life grants:

• $850 for mathematics students to do out with families in Cambridge
• $2,000 to support "Hidden Jewels of Our Community," a juried art show for work by graduate students and spouses
• $2,500 to the Sand Mandala project at Simmons Hall

The MIT community, the news media and curious passers-by could lead to rewarding social experience.

MIT Tech Talk

NEWS

June 2, 2004 PAGE 3

News Office redesigns site

Sporting a simple, practical and user-friendly structure, a new web page has been unveiled by the MIT News Office, allowing for smoother research, browsing and access to critical News Office services.

The new streamlined web site “serves all our constituencies—the MIT community, the news media and curious people everywhere—quite well and with a high level of ease,” said News Office Director Arthur Jones.

Chief among the features of the new site is the “by topic” button that leads to five dozen topics, from aeronautical and astronomical engineering to voting technology. Each topic page includes recent and archived news stories as well as related MIT web sites.

The site lists three main categories (News, Services, Alumni) in the menu section, reflecting a shift away from a multi-publication structure to a sharper news focus and emphasis on the full array of News Office services, including writing or editing news stories for the News Office, subscriptions to e-mail news and RSS news feeds, and forms for ordering images are some of the services offered.

The site at http://web.mit.edu/newsoffice went live in early June, and, with more than 11,000 documents available, was nearly a year in the making.

News Office web editor and developer Lisa Lindquist said the site will continue to be updated and revised. MIT community members may contact her by comments at newsoffice@mit.edu.

Following the year’s final issue of MIT Tech Talk on June 9, the web site will be the Institute’s primary news source until late August, when the newspaper begins publishing.

In addition to offering research and campus news over the summer, the web site will follow MIT sophomore Adam Raczmark on his cross-country bike ride to raise money for the Children’s Association Widow’s and Children’s Fund (see story on page 4).

ALZHEIMER’S

Continued from Page 1

Previous research in the Lindquist lab described how a protein called Hsp104 seemed to affect Sps35’s ability to form amyloid fibers. When a yeast cell contains either high amounts of Hsp104 or none at all, the fibers flourish. But when Hsp104 levels were small, the fibers disappeared.

While these types of relationships between chemicals aren’t unheard of, the role of Hsp104 is unique. Both high levels of Hsp104 and the absence of Hsp104 caused the same effect. That certainty was to figure out what was going on,” said Lindquist.

In the new study, Lindquist and postdoctoral researcher James Shorter isolated Sps35 and Hsp104. They showed that small amounts of Hsp104 catalyzed the formation of amyloid fibers, but large levels of the protein actually caused the fibers to dissolve.

“Given their resilient structure, the fact that a protein can take apart these amyloids is remarkable,” Lindquist said. “It has huge implications for our understanding of the protein folding process in amyloid-related conditions.”

This research may also contribute to scientists’ understanding of evolution. Prior studies indicate that proteins that are vulnerable in conditions such as mad cow disease, are a subclass of amyloids. In yeast cells, Sps35 technically is a prion, although it is not toxic to the cell. Many researchers suspect that because prions have been so well conserved in yeast for hundreds of thousands of years, they must serve some evolutionary purpose, and that’s where Hsp104 comes in.

Hsp104 belongs to a class of proteins that sometimes is influenced by environmental factors. It is conceivable, Shorter explained, that a yeast cell in one type of environment can experience an abundance of Hsp104, which would then keep Sps35 from forming amyloid fibers in that cell. But put that cell in a different environment and the result may be a more moderate level of Hsp104 that would, in turn, create amyloid fibers in Sps35, changing how that protein functions and ultimately altering the cell’s biology.

And because these changes could then be passed on to subsequent generations of cells, this would be an example of environmental guiding the evolutionary process, the scientists noted. “This is speculation that hasn’t been demonstrated yet,” Shorter said. “For obvious reasons it’s hard to prove any evolutionary argument. But this paper is one indication that this might be the case.”

The work was supported by a Charles A. Kind Trust postdoctoral fellowship and the National Institutes of Health.
Ketterle wins Killian Award

Denise Brehm
News Office

Professor Wolfgang Ketterle, one of the first observers of a new state of matter called the Bose-Einstein condensate and creator of the first atom laser, is MIT’s James R. Killian Jr. Faculty Achievement Award winner for 2004-05.

The physicist shared the Nobel Prize in physics in 2001 with two MIT alumni for their discovery of Bose-Einstein condensation (BEC) in 1995. Ketterle went on to be the first scientist to realize an atom laser in 1997. Known also as an exceptional teacher and lecturer, he now has been named by his faculty colleagues to hold the Killian title and deliver a lecture on his work in spring 2005. The award was established in 1971 as a tribute to MIT’s 10th president; it recognizes extraordinary professional accomplishment by an MIT faculty member.

“His research group focuses on the study and applications of quantum-degenerate gases and laser-like atomic beams. He has made pioneering contributions to sources, superfluidity and properties of multiparticle condensates. Ketterle is a fellow of the American Physical Society and a member of the American Academy of Arts and Sciences, as well as the equivalent European scientific societies. In addition to the Nobel Prize, which he received with Eric Cornell and Carl Wiemann, he is winner of numerous other awards, including the Order of Merit of the Federal Republic of Germany (2002).”

Ketterle won the Nobel Prize in 2001 for his work on Bose-Einstein condensation (BEC), a state of matter in which atoms become identical and form a single quantum entity. This achievement was a significant scientific breakthrough and has since led to numerous applications in fields such as quantum computing, quantum information, and particle physics.

Outstanding contributions include the creation of the first atom laser, which was a groundbreaking achievement in the field of atomic physics. His work has also contributed to the understanding of quantum mechanics and the behavior of matter at the atomic level.

These developments in atom laser technology have potential applications in various fields, including quantum computing, quantum information processing, and precision measurements. The atom laser's unique properties offer new possibilities for studying quantum effects and could lead to advancements in technology that exploit these quantum phenomena.
Faculty members awarded tenure

The Corporation’s Executive Commit-tee approved 16 faculty members for pro-motion to tenure on May 7. Individual pho-tos and profiles, including any additional members of the faculty who receive tenure before the end of the academic year, will appear in the next issue of MIT Tech Talk.

Those who received tenure are William H. Green, Jr., professor of electrical engineering, and Saman Amarasiri, William Freeman, and Tommi Jaakkola of electrical engineering; Angela Becker of materials science and engineering; Daniel Fox and Norvin Richards III of linguistics and philosophy; Thomas DeFrantz of music and theater arts; Edward Steinfeld of political science; Helen Lee of writing and humanistic studies; Kristin Forbes of brain and cognitive sciences; Robin Sloan of technology and society; and Kevin P. Kwan of materials science and engineering.

Booklet, timeline portray Vest presidency years

President Charles M. Vest will preside over Institute Commencement exercises for the 14th and final time this Friday. To mark this occasion and to celebrate the dynamic and innovative years of his presidency, the News Office asked him to reflect in writing on the defining moments of the years since 1990.

The result is a booklet containing six essays written by Vest, along with an acco-redator and interviewer on President Vest’s leadership and accomplishments over the past 14 years,” said Arthur Jones, director of the News Office. “As individuals and as a group, we have carried MIT’s key messages to outside media and the larger world. We’re pleased to publish President Vest’s reflections on MIT’s recent growth and ongoing challenges. This is an opportunity for all of us to appreciate and better understand an important chapter in Institute history.”

The News Office booklet project began in April, when the News Office asked Vest to comment on some of the key chal-

lenges and innovations that were most meaningful to him and to MIT. He was enthusiastic about the project, but empha-sized that it should focus on MIT and not on his personal experiences. His introduction to the essays sets the booklet’s thoughtful tone:

“Serving as president of a major research university is not a sandbox ambition for any child—I remain frankly astonished at the road that led me here. I am also over-whelmed with the sense of how much I owe to the insight, imagination, inspiration and judgment of the many, many gifted people I have been lucky enough to work with at MIT,” he writes.

Vest’s essays reflect on the genesis of MIT’s office in Washington, D.C.; the per-sonal and professional challenges he and his colleagues underwent following the Report on the Status of Women Faculty; a behind-the-scenes view of OpenCourse-Ware; the pursuit of the brain and cognitive sciences as one of MIT’s major intellectual priorities; and two essays on building the most invigorating campus and campus life for MIT’s students, faculty and staff.

The timeline offers a snapshot of each year. To see a web-based version of the timeline, go to http://web.mit.edu/timeline.

Faculty members awarded tenure

The Dibner Institute for the History of Science and Technology will welcome nine senior fellows, one research scholar, four postdoctoral fellows, four re-appointed postdoc-toral fellows, one science writer fellow, and seven graduate student fellows.

The senior fellows are: Thomas Archibald, professor of Mathematics at Acadia University; Sonja Brentjes, an independ-ent scholar; David Cahan, professor of history at the Univer-sity of Nebraska; Giora Hon of the University of Haifa; Cesare Maffoll of the École Européenne in Luxembourg; Coverey Valencis of Washington University in St. Louis; James Voelkel, an independent scholar; and Sara Werniel, a visiting scholar in MIT’s Program in Science, Technology and Society (STS).

The senior research scholar is W. Ford Doolittle of Dalhousie University. First-year postdoctoral fellows are: Kristine Harper, who received her Ph.D. from Oregon State University, doctoral candidate Andrew Johnston, studying architectural history at the University of California at Berkeley; Takashi Nishiyama of Ohio State University; and Chen-Fang Yeang of STS.

Second-year postdoctoral fellows are Peter Bokulich of the University of Notre Dame; Claire Calagago, who received her Ph.D. in archaeology from Oxford University and has been a vis-iting scholar in STS; Danie Daniels of Indiana University; Gerard J. Fitzgerald of Carnegie Mellon University; and David Panta-soni, who received his Ph.D. from the University of Toronto.

The new science writer fellow is freelance writer Seth Shul-man.

Graduate student fellows are Alexander Brown, Peter Shulman (S.B. 2001), Jenny Leigh Smith, and Anna Zilberstein of STS. Luis Campos and Pascale Oozeer are associate fellows in the Department of the History of Science; and Dr. Katrien Vander Straeten, a student in Boston University’s Center for Philosophy and History of Science.

Robert Langer

Robert Langer, the Germeshausen Pro-fessor of Chemical and Biomedical Engi-neering, has been awarded the Charles F. Kettering Prize, one of three awards given annually by the General Motors Cancer Foundation. The $250,000 prize recognizes the most outstanding recent contribution to the diagnosis or treatment of cancer.

Langer was cited for his major contri-butions to the development of sustained-release drug delivery systems for the treatment of cancer.

“I went into cancer research because I had always drawn a lot of lessons from helping people,” Langer said. “I wanted to use my science and engineering back-ground in a way that would help people live lon-ger and healthi-er lives.”

Langer’s achievements have had a pro-found impact on the field of can-cer research. His accomplish-ments are also unique in that he entered the field with a Ph.D. in chemi-cal engineering, then he teamed with cancer researcher Judith Folkman at Children’s Hospital in Boston in 1974. At that time, the scientific commu-nity believed that only small molecules could pass through a plastic delivery sys-tem in a controlled manner.

In the 1970s, Langer went on to develop polymer materials that allow the large molecules of a protein to pass through membranes in a controlled manner to inhibit angiogenesis, the process by which tumors recruit blood vessels. Blocking angiogenesis is critical to fighting can-cer because the new blood vessels allow tumor cells to escape into the circulation and lodge in other organs.

In addition, this discovery led to his work on biodegradable polymers with Henry Brem of the Johns Hopkins University School of Medicine led to new treatments for patients with brain cancer.

“In a general sense, I think the signifi-cance of our discovery is that it opened up the field of controlled drug delivery systems, allowing for treatments with mol-ecules of varying sizes that could be deliv-ered over a broad range of time periods—days to months,” Langer said. “Specific to cancer research, I think it helped in three areas: the angiogenesis field, the develop-ment of new treatments, and the introduc-tion of local chemotherapeutics.”

“Receiving the Kettering Prize is an enormous honor for me,” Langer added. “I’m very proud that this award is a sym-bool of recognition for the impact bio-medical engineering has had on the fight against cancer. And I hope it inspires others to pursue a career in cancer research.”

GM will present the prize to Langer during an awards ceremony on Wednesday, June 9. The ceremony is part of the GMRF Annual Scientific Conference. Langer will give a lecture describing his research.
Tech Day 2004 looks at America's passion: cars

Automobiles—how they're made, their problems and their effects on our lives—are topics of "Shifting Gears," this year's Technology Day program for alumni on Saturday, June 5 in Kresge Auditorium.

"Cars are a prism through which you can view many aspects of American life and culture," said Keith McKay (SB 1970), head of the Technology Day Committee and managing director of Village Software in Boston. "Eighty to 100 years ago, the car was an elegant solution to a problem of the time. Now it's still a solution, but there are problems associated with it, and we need to look at whether it's still the right solution."

In a format change from recent Tech Days, the afternoon will feature a second panel discussion in Kresge rather than breakout sessions in other locations. "We didn't want to get too diffuse," McKay said, adding that in previous years, some participants said they were disappointed at being able to attend only one of the simultaneous afternoon sessions.

The morning session in "Shifting Gears" will examine some of the challenges associated with the automobile, including mobility, environmental concerns, limited resources, impact on urban environments and issues facing an aging population.

The afternoon program from 2:15 to 5 p.m. will be moderated by Norman Augustine, retired chairman and CEO of Lockheed Martin Corp. Panelists will be:

- Daniel Roos (SB, 1963, S.M., Ph.D.) of the Japan Steel Industry Professor, associate director for engineering systems and co-director of the Engineering Systems Division at MIT.
- John B. Heywood (S.M. 1962, Ph.D.), the Sun Jae Professor of Mechanical Engineering and director of the Center for 21st Century Energy and the Sloan Automotive Laboratory at MIT.
- Rafael A. Gakenheimer, professor of urban studies and of civil and environmental engineering at the MIT Center for Transportation and Logistics and director of the MIT AgeLab.

The afternoon program from 2:15 to 5 p.m. will be moderated by Norman Augustine, retired chairman and CEO of Lockheed Martin Corp. Panelists will be:

- Ernest J. Moniz, professor of physics and director of energy studies in the Laboratory for Energy and the Environment
- William Mitchell, professor of architecture and head of the Program in Media Arts and Sciences
- Anne Asensio, executive director of advanced design with General Motors
- Dean Kamen, president of DEKA Research and Development Corp., chairman of Segway and founder of FIRST

"The program will also include Rob Bussell Bennett's "The Four Free- doms Symphony" performed with a film produced by Susan Dangel and Dick Bartlett with text and narration by Charles Osgood; John Williams' "Hymn to New England", a multiple birthday tribute to Count Basie, Glenn Miller and Fats Waller; Irving Berlin's "There's No Business Like Show Business"; "A Billy Joel Triptych"; selections of works by Duke Ellington, and "Hot Honey Rag" from Kander and Ebb's "Chicago."

As tradition demands, the concert will conclude with a singalong version of MIT's alma mater, "In Fruite of MIT."

The concert is sold out as tickets were purchased by this year's gradu ates and alumni returning to campus for reunions and Tech Week.

Seth Bisen-Hersch, who graduated in 2001 with degrees in computer science and music, will perform his musical study of heterosexuality, "The Gayest Straight Man Alive," weekends June 4-12 at Where Eagles Dare on 33rd Street (New York).

Show times are 10:30 p.m. on Fridays and 5 p.m. on Saturdays. Bisen-Hersch, who earned a master's degree in music technology at New York University, also announced that his new musical satire about a lecturer who's elected to public office, "The Spickner Spin," has been accepted into the 2004 New York International Fringe Festival (Aug. 13-29).

America's passion: cars

Tech Day 2004 looks at America's passion: cars

While Keith Lockhart is celebrating his 15th year as conductor of the Bos ton Pops, Tech at Pops at June 5 at the Pops Center celebrates its far greater longevity—105 years as an annual tradition. On Thursday, June 3, Lockhart will lead the Pops in a concert that includes a guest appearance by Evan Ziporyn, MIT's Renan Sahin Dis tinguished Professor of Music, who will be the soloist in Artie Shaw's "Concerto for Clarinet."

"I'm honored for my expertise on the Balinese gamelan and as an innovative composer for combined ensembles of gamelan and western instruments. Zipor yn will swing to a piece originally composed for the Fred Astaire film, "Second Chorus," Ziporyn has performed with singer/songwriter Paul Simon, the Bang on a Can All-Stars and Steve Reich, also directs MIT's Gamelan Galak Tik.

Professor Evan Ziporyn will perform Artie Shaw's "Concerto for Clarinet" on June 3 at the 107th Tech Night at the Pops.

The program will also include Rob Bussell Bennett's "The Four Free- doms Symphony" performed with a film produced by Susan Dangel and Dick Bartlett with text and narration by Charles Osgood; John Williams' "Hymn to New England", a multiple birthday tribute to Count Basie, Glenn Miller and Fats Waller; Irving Berlin's "There's No Business Like Show Business"; "A Billy Joel Triptych"; selections of works by Duke Ellington, and "Hot Honey Rag" from Kander and Ebb's "Chicago."

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"The program will also include Rob Bussell Bennett's "The Four Free-
Graduating students look back on experiences

As thousands of students prepare to receive their MIT degrees on Friday, Tech Talk spoke with four of them about what they learned at the Institute, how MIT changed them, and what they plan to do next.

James Dai
Vancouver, B.C.

Receiving the S.M. in media arts and sciences (thesis research on “intelligent” image retrieval for online communities)

The most important things I’ll take away from here are the relationships I formed. I learned that the academic path is not for me right now and that I have a long way to grow as a person. The best part about MIT! The opportunity to work with amazing people with different backgrounds, and the chance to do theater in such an exciting environment. [Dai received the Levy and Jerome B. Wiener Award for achievement as a performing artist, designer and videographer.]

Becky Pferchdit
Medford, Wis.

Receiving the S.B. in biology

The education has been beautiful, but without a doubt it’s the people here who have really made my MIT experience special. When I first came here, I was a little research-versed—only interested in their studies. I’ve become a bit more interested. These people I’ve met here; I’ve no doubt I’ll be in contact with for the rest of my life.

The best part about MIT was being part of Alpha Phi [sorority]. It was wonderful to have an academic life, social life and community service. Spending last summer in Paris through the MIT-France Program was the most amazing experience I’ve had here. I’ve been very impressed with the foreign language program. In about two years I went from knowing some words to being pretty fluent. MIT students love to talk MIT. My advice is to not be afraid to own up to the fact that you like people from all walks of life and do things outside of just schoolwork, and don’t be afraid to do things that aren’t typically MIT.

Post-grad plans:
I’m taking a year off before entering a Ph.D. program in biology at [the University of California at] Berkeley. This summer I’ll be bartending back in my hometown of Madison, Wis., then in the fall I hope to attend beauty school. I’ve always been very interested in fashion, hair and art of makeup. I think learning about them would be a good life skill.

In spring 2005, I want to do a combination of traveling and community service. I’ve applied to the Mercy Ship Program, in which doctors stop at ports along the African coast to give free health care to people who wouldn’t otherwise have access to it. I don’t have any medical experience, but I need volunteers to help the doctors with small tasks. If I don’t get into that program, I’ll apply for something through Habitat for Humanity.

In the long term, I’m planning to continue in academia. Some day I’d like to have my own lab doing cancer-related research.

Elena A. Smith
Oroville, BI

Receiving the S.B. in management

The nicest surprise about MIT for me was the relative nonexistence of competition. Soon after classes began, I discovered that pretty much everyone I encountered was eager to work together to solve problem sets and, in general, to collaborate and achieve great things. There are an incredible number of amazing people here and with this environment, it doesn’t surprise me that MIT can accomplish so much.

I feel a bit more cynical or pessimistic, but most of the time, I still have a pretty good outlook on life. I think MIT has also shown me to keep the big picture in mind. If you focus too much on the small stuff, it’s easy to get lost completely.

Post-grad plans:
I’m taking the summer to travel abroad and then will be starting a career in electrical engineering in the fall. I plan on grad school, but have made no definite plans yet.

Jesse Smithnofsky
Eighty-Four, Penn.

Receiving the S.B. in computer science and engineering

First of all, I loved MIT. I loved the chance to meet absolutely incredible people, to take on an amazing challenges (25 hours a week on subject 6.170, 10 hours a week as an officer in my fraternity, and 10 to 15 more in the pool for the swim team), and to have fun all at the same time.

Coming in, I suspected that, as a whole, MIT people would be pretty good at life in general—everyone I encountered was eager to work together to solve problem sets and, in general, to collaborate and achieve great things. There are an incredible number of amazing people here and with this environment, it doesn’t surprise me that MIT can accomplish so much.

I also thought that there would be a fairly strong sense of community at MIT. I don’t think that’s true either. People know their roommates or maybe even the people from their dorm or living group, but beyond that nobody knows anybody. I’m guilty of it, too; my 10 best friends are all in different classes. I think I’ve grown up a lot. Unfortunately, I believe I’ve developed a lot of stereotypes about people. The simple fact of the matter is that they’re things like conflict resolution, setting priorities, and meeting deadlines. How else did they get into this place? As it turned out, I was completely wrong about that.

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The following awards were presented at the Institute Awards Convocation on May 4. Some awards announced at the convocation appear elsewhere in this issue; art-related awards are on page 9; living group awards are on page 14, and the Patrick J. McGovern ’59 Entrepreneurship Award is listed with the Sloan School of Management awards on page 12.

**Service**

William L. Stewart Jr. Awards—for contributions by an individual student or student organization to extracurricular activities and events during the preceding year

David A. Berry G, biological engineering, Mt. Kisco, N.Y.

William S. Dellhagen G, EECs, Manhattan Beach, Calif.

Peter T. Rye G, chemistry, Merriam, N.H.

Hans Tung G, management, Rancho Palos Verdes, Calif.

Rose A. Grabowski ’05, management, Andover, Mass.

Fahad H. Kajani ’05, management, Richmond, Texas

John R. Velasco ’05, political science, La Mesa, Calif.

Laya Wiesner Community Awards—for a member or friend of the MIT community for conspicuously effective service that reflects Mrs. Wiesner’s concerns for enhancing life at the Institute and the world

Maryanne Kirkbride, MIT Medical’s clinical director for campus life

Priscilla King Gray Award for Public Service—for an undergraduate exceptionally committed to public service at MIT and its surrounding communities

Anne Klomwieder ’04, biology, Dayton, Ohio

James N. Murphy Award—for an employee whose spirit and loyalty exemplify inspired and dedicated service, especially with regard to students

Gabrielle Abelard, program manager for graduate residences in Student Life Programs

**Awards convolution**

Robert T. Ramsay Jr., house manager of MacGregor House

Gordon Y Billard Award—for special service of outstanding merit performed for the Institute

Vicky Siranni, chief facilities officer in Facilities

Karen Nilsson, director of Housing

Karl Taylor Compton Prize—for achievements in citizenship and devotion to the welfare of MIT

R. Erich Caufield G, EECs, Baton Rouge, La.

Emily Cofer ’04, mechanical engineering, Millis, Mass.

John S.W. Kellett ’47 Award—for a commitment to creating a more welcoming environment at MIT, including but not limited to improving the experience of lesbian, bisexual, gay, transgendered (LBGT) and questioning individuals

Benjamin R. Wagner ’05, EECs, Nashua, Mont.

Education

Edward L. Horton Fellowship Award—for fostering fellowship in the graduate student body

Alexandre Debis G, economics, Drummondville, Quebec

Frank E. Perkins Award—for excellent advising for graduate students

Associate Professor Peter So of mechanical engineering

Irwin Sizer Award for the Most Significant Improvement in MIT Education

Associate Professor Caroline A. Ross of materials science and engineering

Graduate Student Council Teaching Award—for excellence in teaching a graduate-level course, given each year to one professor or teaching assistant from each school

Professor William Porter, architecture

Professor Lee Gehrique, HST

Assistant Professor Jared Cohan, Sloan School of Management

Professor Asuman Ozdaglar, EECs

Dionne Margetis, instructor in mathematics

Professor David Kaiser, SITS

Shan-Yuan Ho G, EECs, San Francisco

Goodwin Medal—for a student whose performance of teaching duties is “conspicuously effective over and above ordinary excellence”

Brian C. Dean, G, EECs, Cambridge, Mass.

Rajeev Malhotra G, HST, Matsuoka, Calif.

Association of MIT Alumnae (AMITA) Senior Academic Award—for senior women who have demonstrated academic excellence through coursework and related professional activities at MIT


Sanya C. Tang ’04, chemistry, Great Neck, N.Y.

Athletics

Harold J. Pettigrove Award—for outstanding service to intramurals

Kent A. Ross ’04, mathematics, Tokyo

Women and minorities

Albert G. Hill Prize—for minority juniors or seniors with high academic standards and continued contributions to improving the quality of life for minorities at MIT

Pius A. Uzamere ’04, EECs, New Castle, Penn.

Terence Strader ’04, EECs, Cincinnati, Ohio

Laya W. Wiesner Award—for an undergraduate woman who has made the greatest MIT community life

Professor Stephen M. Meyer of political science

Goodwin Medalists Rajeev Malhotra (left) and Brian C. Dean.

**Key to abbreviations**

In the pages that follow, the names of some academic departments and programs have been shortened to save space. A key to abbreviations:

- **Aero/astro** Aeronautics and astronautics
- **BCS** Brain and cognitive sciences
- **CEE** Civil and environmental engineering
- **CSAIL** Computer Science and Artificial Intelligence Laboratory
- **DUSP** Department of Urban Studies and Planning
- **EAPS** Earth, atmospheric and planetary sciences
- **EECS** Electrical engineering and computer science
- **HST** Harvard/MIT Division of Health Sciences and Technology
- **STS** Program in Science, Technology and Society
- **UROP** Undergraduate Research Opportunities Program
Awards Convocation

Louis Sudler Prize in the Arts—to a senior who has demonstrated excellence in music, theater, painting, sculpture, design, architecture or film
Andrew P. McPherson ’04, music, Woodbury, Minn.

Laya and Jerome B. Wiesner Award—to students, organizations and/or living groups for achievement in the creative and performing arts
James Dai G, media arts and sciences, Vancouver, B.C., for his involvement in theater and his work as a designer and videographer
Daniel J. Paluska G, mechanical engineering, Somerville, Mass., for his “interest in creating communities of and venues for artists whose work involves art and engineering.”
Andrew J. Peretbe ’04, EECS, Santa Fe, N.M., for his contributions to theater and dance at MIT

Harold and Arlene Schnitzer Prize in the Visual Arts—for artistic talent and creative concepts based on a body of work and written personal statements
1st prize: Coryn Kempster G, architecture, Brantford, Ontario
2nd prize: Lisa M. Bidlingmeyer G, comparative media studies, Frazer, Penn.

Music and theater arts

Einstein Award
Daniel Stein ’05, EECS, Palm Beach Gardens, Fla., for distinguished service and musical contribution to the MIT Symphony Orchestra
Gregory Tucker Memorial Prize—for ability in composition, performance, or music-historical studies and over-all contributions to the music and theater arts section
Percy Liang G, EECS, Portland, Ore.
Ethan Fenn ’04, mathematics, Painted Post, N.Y.
Jeremy Baskin ’04, chemistry, Westmount, Quebec.

Philip Loew Memorial Awards—for creative accomplishment in music
Alexander Mekelburg ’04, mechanical engineering, Baltimore
Thomas Coffee ’05, aero/astro, Torrance, Calif.

Other Awards
Vera List Prize in Art and Writing—for exceptional expression on some aspect of contemporary art
1st prize: Cecilia Ramos ’05, architecture, Concord, Mass., for an essay titled “Mark Rothko’s The Black and the White: In Pursuit of the Kanaiti Sublime”
2nd prize: Tiffany Kanaga ’04, French and management science, Greenville, Del., for “A Study of Seascape: Moving Beyond Pop Art”

MIT Symphony Concerto Competition
Percy Liang G (S.B. 2004), EECS, Portland, Ore.

List Foundation Fellowship in the Arts
Dang Vu ’05, biology, Jamaica Plain, Mass., for a music composition and performance project for a work to be titled “The Poison Clan Suite: A Celebration of Mutant Culture.”

Students honor Vests at awards convocation

President Charles M. Vest and his wife Rebecca received a special tribute at the Institute Awards Convocation on May 4 for their work on behalf of MIT students over the last 14 years.
R. Erich Caulfield, president of the Graduate Student Council, noted the many financial and physical improvements to MIT during President Vest’s tenure. But more important, Caulfield said, is “an investment which strikes at the very core of the Institute’s character is the one that has been made in people.”
“By not only acknowledging, but embracing the observations made in the Study on Women Faculty in Science at MIT, President Vest has pushed the door open just a little farther for an entire generation of young women who might now find it a bit harder to believe that smart girls don’t do math and science,” he said.

“When affirmative action was challenged, he ensured that MIT continued its proud tradition as a world leading institution by championing the right and need for institutions of higher learning to view diversity as a critical part of the educational experience,” said Pius Uzamere II, president of the Undergraduate Association.

“Dr. Vest has served with a steadfast passion and led with honesty and integrity. He has taken MIT towards a new and brighter future, ensuring that the legacy that William Barton Rogers left the world near a century and a half ago will continue to live and grow,” Uzamere said.

Caulfield presented a bouquet of flowers to Mrs. Vest and MIT baseball caps to both Vests as “small tokens of our appreciation.”
Phi Beta Kappa

Sudha Rani Amarnath, Lansing, Mich. (biology and chemical engineering)
Alexandra Andoni, Chisinau, Moldova (EECS and mathematics)
Joshua Paul Aronson, Centereach, N.Y. (biology)
Jason Michael Baron, Sarasota, Fla. (biology)
Thomas Steven Baskin, Westmount, Canada (chemistry)
Martha Weaver Buckley, Washington, D.C. (physics and mathematics)
Philip Johannes Butler, Lubbock, Texas (biology)
Elsa Caliman, San Juan, Puerto Rico (chemistry)

Georgiana Andreea Cepoiu, Bucharest, Romania (economics)
Chung Kit Chan, Brooklyn, N.Y. (management and mathematics)
Jennifer Tenye Chang, Houston, Texas (biology)
Hogan Chen, College Point, N.Y. (economics and mathematics)
David Rolin Cheng, Avondale, Penn. (EECS)
Robert Wen-Chieh Cheng, Whittier, Calif. (physics and mathematics)
Jonathan Dale Choi, Tulsa, Okla. (biology)
Lee Shun Chudamas, Watchung, N.J. (biology)
John Stephen Danaher, Springfield, Va. (EECS and mathematics)
Arun M. Manekha de Fonseka, Somerville, Mass. (biology and chemical engineering)
Jesse Gan DING, Scarborough, Canada (economics and management)
Roy Kuriaki Esaki, Kapaa, Hawaii (mechanical engineering)
Onsi Joe Fakhouri, Dasma, Kuwait (physics and mathematics)
Ann Marie Elizabeth Faust, Derby, N.Y. (biology)
Maksym Fedorchuk, Kiev, Ukraine (mathematics)
Ethan Michael Fenn, Painted Post, N.Y. (mathematics and music)
Michal Ganz, Amherst, Mass. (biology)

Engineering Systems Division

Martin Fellowship for Sustainability
All Mostashar G, engineering systems, Tehran

Charles L. Harrison’ Smith Award
Aaron Rapfel ‘05, materials science and engineering/LFM, Somerville, Mass.

Eric Pos Dissertation Prize Competition in Travel Behavior Research (Honorable Mention)
Tamar Toledo, research associate (Ph.D. ’03), Bat-Yam, Israel.

Integrative Graduate Education and Research Training Program grant

Max Goldman, Wellesley, Mass. (mathematics)
Aleksey Golovin, Jersey City, N.J. (physics and mathematics)
Paul Erik Gottlob, Stockholm, Sweden (mathematics)
Jonathan Reed Harris, Purcellville, Va. (economics and management)
Jessica Lynn Haurin, Columbus, Ohio (EAPS)
Daniel Steven Herman, Yorktown Heights, N.Y. (biology)
Timmie Ting-Wei Hong, San Diego (materials science and engineering)

James Huess III, Atlanta (mathematics)
Izzat Nabul Jarudi, Westwood, Mass. (BCS)
Mindy Ju, Charlotteville, Va. (biology)
Teresa Sora Kim, West Hartford, Conn. (biology)
Alexandra Kornilova, Riga, Latvia (biology)
Timothy Bryan Krôder, Moorestown, N.J. (mathematics)
Martin Vasiles Kruetve, Chicago (biology and BCS)
Yuk Yam Lam, Morganville, N.J. (physics)
Sarah Lasllo, Billings, Mont. (BCS)

Anne Eunhie Lee, Rockville, Md. (economics and mathematics)
Joan Tudor Leu, Paunste Vancea, Romania (EECS)
Matthew Richard Levy, Okemos, Mich. (economics)
Perico Shu Liang, Portland, Ore. (EECS and mathematics)
Walton William Lin, Williamsburg, Va. (EECS and mathematics)
Nayda Mayjee, Markham, Canada (biology)
Andrew Palmer McPherson, Woodburn, Minn. (music)
Arkur Mukesh Mehta, Stroudsburg, Penn. (physics)
Michael John Mortonson, Green Bay, Wis. (physics)
Enrique Andrez Munoz Torres, Santiago, Chile (EECS)
Michelle Kyaw Nyein, Buffalo Grove, Ill. (chemistry)

Aron Joseph Pamess, Dekalb, Ill. (mechanical engineering and writing)
Joshua Seth Peters, Natchitoches, La. (EECS and mathematics)
David Christopher Poland, East Providence, R.I. (physics)
Raymond Raad, Brooklyn, N.Y. (EECS and mathematics)
Daniel Robert Ramage, Westfield, N.J. (EECS and mathematics)
Rohit Navalpund Rao, Rochester, N.Y. (EECS and mathematics)

Int. Raplley, Cambridge, Mass. (BCS and philosophy and linguistics)
Sonal Radha, Sugar Land, Texas (biology and chemical engineering)
Ashleigh Lynn Sanders, Fairfax, Va. (biology)

Leah M. Scharf, Sharon, Mass. (biology)
Lauren Michelle Schiff, Calabasas, Calif. (management)
Michael Douglas Seeman, Los Altos, Calif. (EECS and physics)

David Gordon Self, New Rochelle, N.Y. (economics)
Andrew David Selbst, West Orange, N.J. (EECS and physics)

Alp Simsek, Antalya, Turkey (EECS and mathematics)
Amada Paige Smith, Rockport, Maine (architecture)
Hyungbin Son, Youngin Kyunggido, Korea (physiology)
Jessica Lyn Haurin, Columbus, Ohio (economics)

Jenny Sa, San Francisco, Calif. (mechanical engineering)
Sonia Chen Tang, Great Neck, N.Y. (chemistry)

Aekkarat Thitimon, Ladyaodo, Chonbuk Ban, Thailand (EECS)
Michael Boonlieng Wongchaowat, Chiang Mai, Thailand (biology)

Phong Wu, Ames, Iowa (chemistry and biology)
Joseph Lin-Kang Yeh, Eilcott City, Md. (biology)

Bob Yin, Staten Island, N.Y. (biology)

Nuclear engineering

PAI Outstanding Teaching Award—presented by the student chapter of the American Nuclear Society
Professor Sidney Yip

Manson Benedict Fellowship—to a graduate student for excellence in academic performance and professional promise in nuclear engineering
Paola Capellaro G, Milano, Italy
Lorenzo Pagani G, Milano, Italy
Peter Varsky G, Munhall, Penn.

Roy Axford Award—for academic achievement by a senior in nuclear engineering
Alexandra Awai ‘04, Clovis, Calif.

Irving Kaplan Award—for academic achievement by a junior in nuclear engineering
Michael Stawicki ‘05, Bow, N.H.

Outstanding Student Service Award—for exceptional services to the students, the department, and the entire MIT community
Ben Parks G

Outstanding Teaching Assistant Award
Jiyun Zhao G, Shandong Province, China
Brad Schuller G, Sylvania, Ohio

Award winners in biology include (back row) Cynthia Lien and Michael Wongchaowat, and (front row) Bob Yin and Rita Monson.

Bioengineering Systems Division

Martin Fellowship for Sustainability
All Mostashar G, engineering systems, Tehran

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Brad Schuller G, Sylvania, Ohio

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Student Life Programs

Residential Life Programs

Legacy Award—for initiating a program or project that will have a lasting influence on the residence community
East Campus, for the Bad Ideas Competition

“Grace Under Fire” Award—for showing strength in the face of adversity
Deepthi Mehta ’04, mathematician, Dar es Salaam, Tanzania

Outstanding Graduate Resident Tutor Award
Jancie Lansita G, biological engineering, New York

Outstanding Graduate Coordinator Award
Cort and Corey Johnson, for their work in Eastgate

Outstanding Residence Hall Event of the Year Award
Simmons Hall, for its Sand Mandala

Outstanding Graduate Residence Hall Event of the Year Award
Westgate, for its Cultural Exchange Through Cooking class

Outstanding Graduate Residence Hall Government Award
Eastgate

Residential Teamwork Award
Family Housing Committee

Student Activities Office
Best Large Event Fund Committee supported event

Spring Comedy Event

Undergraduate Leadership Award
Alya Whisy ’04, architect, Monarch, Ga.

Graduate Leadership Award
LaRuth McAfee G, chemical engineering, Ann Arbor, Mich.

Outstanding Graduate Treasurer Award
Arvind Govindarajan G, biology, Quincy, Mass., of the Science and Engineering Business Club

Outstanding Graduate Architecture Award
John Velasco ’05, political science, La Mesa, Calif., of the Undergraduate Association

Best Performing Arts Award
Casino Rueda, for its “International Faria” event

Architecture

Marvin E. Goody Awards
Lydia Kalipiti G, Thessaloniki, Greece
Maria Alexandra Sinisterra G, Bogota, Colombia

William Everett Chamberlain Prize—for achievement in design
Stephanie Hsu ’04, Winter Park, Fla.
Sarah Seung Shin G, West Orange, N.J.

Outstanding Undergraduate Architecture Prize—for academic and design excellence
Joyce Wang ’04, Atherton, Calif.
Lisa Mroszczyk ’04, Danvers, Mass.

Francis Ward Chandler Prize—for achievement in architectural design
Rori Dajao G, Portsmouth, Va.
Matthew Pierce G, Westerville, Ohio

Brain and cognitive sciences

All students are brain and cognitive sciences majors.

Angus MacDonald Awards—for excellence in undergraduate teaching
Ben Balas G, Pittsburgh
Corey Hanvel G, Louisville, Ky.
Itamar Kahn G, Rehovot, Israel
Sehan Oray G, Denver
Alex Rivest G, Arlington, Mass.
Richard Russell G, Oakland, Calif.

Walle Nauta Award—for excellence in graduate teaching

BCS Awards—for continuing dedication to teaching
Charlene Ellsworth G, Baliston Spa, N.Y.

Jamie Nees G, Philadelphia

Amo Poocher G, Wiscasset, Maine
Ned Sahin G, Boston

Walle J.H. Nauta Award—for outstanding research in brain and cognitive sciences
Michelle Machon ’04, Albion, R.I.

Hans-Lukas Teuber Award—for outstanding academics in brain and cognitive sciences
Marko Jameson ’04, Henderson, Nev.
Izzat Jarud ’04, Westwood, Mass.
Martin Kretu ’04, Chicago
Sarah Laszlo ’04, Billings, Mont.
Catlin Schen ’04, Bloomfield Township, Mich.

Honor Mention for Excellence in Teaching—National Science Foundation fellows

Honor Mention for outstanding academic record
Melanie Cornejo ’05, Lima, Peru
Fahran Merali ’05, Toronto
Sidarth Parurum ’05, Edina, Minn.
Lara Rogers ’05, Puyallup, Wash.

Outstanding Recognition Award—a new award for outstanding service to the department
Robert Morgan G, Charlestown, S.C.

HST

HST Student Leadership Award
David Ting G, HST, Pittsburgh

Irving M. London Teaching Award
Richard N. Mitchell, associate director of HST

Thomas A. McMahon Mentoring Award
Associate Professor Dennis Freeman of EECS

Mathematics

Jon A. Bucselu Prize in Mathematics—for scholastic achievement, professional promise and enthusiasm for mathematics
Maksym Fedorchuk ’04, Kiev, Ukraine

Charles and Holly Housman Awards for Excellence in Teaching
Fredric Latour G, L’Epiphanie, Canada
Benjamin Stephens G, Del Mar, Calif.

Charles W. and Jennifer C. Johnson Prize—to a graduate student in mathematics for an outstanding research paper accepted for publication in a major journal
Alexei Obiolskov G, Moscow, for “Double Affine Hecke Algebras of Rank 1 and Affine Cubic Surfaces,” published in International Mathematics Research Notices

Laurie Wiliams G, Palos Verdes Estates, Calif., for “Enumeration of Totally Positive Grassmann Cells,” which will appear in Advances in Mathematics

Physics

Awards are physics majors unless otherwise noted.

Joel Matthew Orlow Award—for outstanding scholarship in physics
Michael J. Mortonson ’04, Green Bay, Wis.

Joel Matthew Orlow Award—for outstanding research in physics
Yuk-Yan Lam ’04, Morganville, N.J.
Sarah A. Nowak ’04, Westport, Conn.

Joel Matthew Orlow Award—for outstanding service to the physics community
Daniel R. Garcia ’04, Barrington, Ill.
Laura A. Lopez ’04, Barrington, Ill.

Malcolm Cotton Brown Award—for a senior of high academic standing in physics who plans to pursue graduate study in experimental physics
Zibong Chen ’04 (physics and EECS), Singapore

Philip Morse Memorial Award—for a senior of high academic standing in physics who plans to pursue graduate study in physics
Onsi Fakhouri ’04 (physics and mathemat-ics), Dasm, Kuwait
Electrical engineering and computer science

All students are EECS majors unless otherwise indicated.

Carleton E. Tucker Award—for teaching excellence
Matthew Notowidigdo G, Columbus, Ohio

Harold E. Hazen Award—for teaching excellence
Petrou Bouzouas G, Dionysos, Greece
Frederick C. Henrie III Award—for teaching excellence
Nathan Srebro G, Haifa, Israel
Edwin Olson G, Bloomington, Minn.

George M. Sowards Scholarship Award—for best computer science Ph.D. thesis
Dina Katabi, Ph.D. 2003
Manolis Kamvysselis, Ph.D. 2003
Alex Snoeren, Ph.D. 2003 (honorable mention)
Northern Telecom/BNR Project Prize

Focus Fellows
For projects that meet needs of community organizations
Yeu-Whai Kathy Lin ’06, political science and mathematics
Kimberly Harrison ’07, mechanical engineering

Student Leader Awards
Best New Service Project
Sidney-Pacific Outreach Committee, for its tax preparation workshops for MIT students and Cambridge residents. Their work also earned a commendation from the Cambridge City Council.

Community Connection Award
Pamresh Shahani G, humanities, for “Between the Lines: Negotiating South Asian LBGT Identity,” a film and literature festival

Community Event Award
Relay for Life, organized by Kyle Rattray ’05, BCS, with Matthew Gatti ’07, Jupiter, Fla., and Christine Graham ’07, Coral Springs, Fla.

Living Service Award
Phi Delta Theta, for service events including Toy Days

Philanthropy Award
The Vagina Monologues

Service Leadership Award—for community service
Jina Kim ’06, materials science and engineering, for renewing the MIT chapter of Best Buddies

Public Service Center
The Public Service Center’s Fellowship Program funds projects that provide sustainable community benefit as well as educational value for the MIT students involved. The fellowships are funded through a grant from the Lord Foundation and by the Public Service Center donors. Fellows each receive $4,000 for summer projects and may also apply for materials grants.

Independent fellowships
Elizabeth Bashia G, EECS, Woodland, Calif., for an automated food warning system for a Honduran community
Andrea McCarty G, Comparative Media Studies, Cambridge, Mass., for a preservation and access project for an African film archive in Burkina Faso
Monica Lewis ’05, astro/astro, Berwyn, Penn., for “Invent India,” a plan for student-community development work at an Indian university
Evan Freund G, DUSB, Washington, D.C., for a project to preserve the environment and develop sustainable tourism practices for Unawatuna, Sri Lanka
James M. Smith G, architecture, for a design for a school, orphanage and medical clinic in Haiti

Vector Fellowships—to create positive change in students’ hometown communities
Monique Lowery ’06, management, Bronx, N.Y., for developing a computer science and peer teaching program for a Harlem youth program
David Bender ’07, EECS, Cosenz., Ill., for “Transitions,” a college preparation program for the teenagers at his largely Hispanic high school
Asia Price ’05, management, Providence, R.I., for a literacy program for her city’s public libraries

Sloan School
All awards are graduate students in management unless otherwise noted.

Sceley Award
Caroline Seaman, Nashotah, Wis.
Lauren Stewart, Bedford, Mass.

Ford Award
Erin Sellman, Boston

DuPont Award
Jeremy Kirsch, Huntington, N.Y.

Sherbourne Award
Sara Weiss, Boston

Trust Fellows
Tanguy Catlin
Thomas Stocky G (media arts and sciences), Glen Allen, Va.
Todd Schwartz, Colorado Springs, Colo.
Niraj Parekh, Somerville, Mass.
Russell Kelhier, Hollis, N.H.

Petersen Fellows
Hans Rabin, Great Neck, N.Y.
Saurabh Tandon, Delhi, India

Patrick J. McGovern ’59 Entrepreneurship Award
话语权 Collaboration: Including the Design and Concrete Launch of I Teams
Hans Tung, Ranchos Palos Verdes, Calif.
Othman Laraki, Casablanca, Morocco
Omer Cedar, Somerville, Mass.

Biological Engineering Division

Biomedical Engineering Society / Johnson & Johnson Excellence Award—for outstanding research in biomedical engineering
Max Cohen ’05, physics, Seattle
Siddharth Puram ’05, biology and brain and cognitive sciences, Edina, Minn.
Amy Shi ’04, chemical engineering, Ann Arbor, Mich.
Julie Tse ’06, chemical engineering, Santa Barbara, Calif.
Woon Teck Yap ’05, biology, Singapore

Keenan Award—for innovation in undergraduate education
Ian W. Hunter, professor of mechanical engineering and biological engineering

Koch Graduate Student Fellowship for Cancer Research and Biogen Idec Graduate Student Fellowship for Industry Leadership
Min Dong G, Biological Engineering Division, Beijing

Outstanding Graduate Resident Tutor Award
Janice Lansita G, Biological Engineering Division, New York
The MIT International Science and Technology Initiatives (MISTI) awarded six Sun Fellowships. Left to right: winners Erica Fuchs, Virginia Corless and Geoffrey Kigongo; Institute Professor Phillip Sharp; and winners Janice Lin, Akua Adu-Boahene and Kyoung-Hee Yu.

MISTI

With the support of Anthony (S.B. 1972) and Rosina Sun, the MIT International Science and Technology Initiatives (MISTI) established a fellowship program that supports international research effort by graduate and undergraduate students. MISTI has sent more than 1,500 students to be interns in labs and offices in Europe and Asia. Anthony and Rosina Sun Fellowships

Erica Fuchs, Reading, Penn., Engineering Systems Division (MIT-China Program)
Akua Adu-Boahene '06, Accra, Ghana, brain and cognitive sciences with a minor in biomedical engineering (MIT-France Program)
Geoffrey Kigongo '06, New City, N.Y., linguistics and philosophy (MIT-Germany Program)
Kyoung-Hee Yu G, Seoul, Korea, industrial relations (MIT-India Program)
Virginia Corless '05, Lowell, Mass., physics with a minor in applied international studies (MIT-Italy Program)
Janice Lin '06, Taiwan, management with concentrations in finance and information technology (MIT-Japan Program)

School of Engineering

Barry Goldwater Scholarship—for students who plan to pursue careers in mathematics, the natural sciences, or an engineering discipline that contributes to the technological advances of the United States
Peter G. Miller '05, chemical engineering, Atlanta
Kathy C. Lin '05, civil engineering, Naperville, Ill.
Andrew J. Danford '05, chemistry, Omaha, Neb.
Vivek Venkatachalam '06, physics, Berkeley Heights, N.J.

Henry Ford II Award—to a senior engineering student who has maintained a cumulative average of 5.0 at the end of his or her seventh term and who has exceptional potential for leadership in engineering and society
Michel Seitz '04, materials science and engineering, Phoenix, Ariz.

Junior Bose Award—to the outstanding contributor to education on the School of Engineering faculty who is being proposed for promotion to associate professor without tenure

Center for International Studies

All awardees are graduate students unless otherwise indicated.

Mellon MIT Program on Forced Migration
Daniel Esser, research fellow in the Special Program for Urban and Regional Studies, Lueneburg, Germany

Travel Fellowship—for doctoral students in international studies who intend to present a paper on international affairs
Daniel Metz, political science, Bethesda, Md.

Cory Welt, political science, Arlington, Va.

Energy, Technology and International Affairs Research Grants—for advanced doctoral students working on any international aspect of energy, environment and international affairs
Marcos Arocavici, political science, Arlington, Mass.
Boaz Atzili, political science, Kibbutz Zikim, Israel
James Patrick Boyd, political science, Madison, Wisc.
Danny Bresnitz, political science, Jerusalem
Dana Brown, political science, Brighton, Mass.

Chemical engineering

All award recipients are chemistry majors unless otherwise indicated.

CRC Press Freshman Chemistry Achievement Award—for academic achievement by a freshman in chemistry
Joel Yuen, Mexico City

ACS Analytical Chemistry Award—for achievement by a junior in analytical chemistry
Ton Sak Luangphaisarnmont, Bangkok

Merck Index Award—for outstanding scholarship
Elsa Caliman '04, San Juan, Puerto Rico
Michelle Nyein '04, Buffalo Grove, Ill.
Peng Wu '04, Ames, Iowa

American Institute of Chemists Foundation Award—for outstanding achievement, ability, leadership and character
Sonya Tang '04, Great Neck, N.Y.

Chemistry Service Award—for significant service to the department
Neal Mankad '04, Williamsport, Penn.
Frederick D. Greene Teaching Award—for outstanding teaching
Jeremy Baskin '04, Westmont, Canada
Neal Mankad '04, Williamsport, Penn.
Sonya Tang '04, Great Neck, N.Y.

Strem Prize—for excellence in undergraduate research
Neal Mankad '04, Williamsport, Penn.

Chemistry Research Award
Kathryn Duffy '04, Port Washington, Wis.
Jennifer Lee '04, Moraga, Calif.
Neal Mankad '04, Williamsport, Penn.

Alpha Chi Sigma Award—for achievement in research, scholarship, and service to the department
Jeremy Baskin '04, Westmont, Canada
Mechanical engineering

All student awardees are mechanical engineering majors unless otherwise noted.

Mechanical Engineering Department Service Award
Tim Suen ’05, University Heights, Ohio
Christina Laskowski ’05, Yardley, Penn.

Joseph H. Keenan Award—for outstanding graduate student in thermal sciences

Meredith Kamm Memorial Award—for an outstanding graduate student
Alicia Hardy G, Philadelphia

Carl G. Sontheimer Prize—for creativity and innovation in design
Christopher Khan ’04, Charlotte, N.C.
Melissa Read ’04, St. Petersburg, Fla.

Padmakar P. Lole Student Award for Outstanding Graduate Assistants
Rosa Hatton ’05, Sudbury, Mass.
Courtney Brownie ’04, Sugar Land, Texas
Marissa Jacobov ’05, Middlebury, Conn.
Melissa Read ’04, St. Petersburg, Fla.

Padmakar P. Lole Student Award for Outstanding Thesis
Kristin Wolfe ’04, Pittsburgh
Luis de Florez Award—for outstanding ingenuity and creativity
Nicholas Powell ’04, Westwood, Mass.
Melissa Read ’04, St. Petersburg, Fla.
Wey-Jin Lin ’05, Los Alamos, Calif.

Peter Griffith Prize—for outstanding experimental project
Tina Shih ’04, flushing, N.Y.
Roy Esaki ’04, Kapaa, Hawaii

Amp Inc. Award—for excellence in “Mechanics and Materials II”
Mika Tomczak ’06, Maplewood, N.J.
Michael Wolf ’06, Waukesha, Wis.

Whitlaw Prize—for originality in design
Michael Wolf ’06, Waukesha, Wis.

AIAA Undergraduate Teaching Award
Professor Karen E. Wilcox

Apollo Award—for the best undergraduate research project on humans in space or successful participation in a Course 16 design project
Laura R. Messeri ’04, West Orange, N.J., and Dominick A. Rizzo ’04, Menomonee Falls, Wisc., for a haptic feedback glove for remote grasping

Thomas Sheridan Award—for work in human-machine integration or cooperation
Chinwe P. Nwokorie ’04, Chicago, and Shen Qu ’04, Duluth, Ga., for display evaluation of an advanced terrain warning system

Leaders for Manufacturing Prize—for students in “Experimental Projects II” whose project deals with the interaction between manufacturing and engineering
Miguel Macias ’04, South Gate, Calif., and Melanie A. Miller ’04, Saline, Minn., for exploring the reliability and cost reduction of using shear pins to control rocket launches.

United Technologies Corp. Prize—for outstanding achievement in design, building, and reporting on an undergraduate experimental project
Julie A. Arnold ’04, Guilford, Conn., and Paula Echeverria ’04, Bogota, Colombia, for developing a method for predicting payload levels during parachute drops

Admiral Luis de Florez Prize—for original thinking or ingenuity
Emily Schwartz ’05, Lawrence, Kan., and Christopher J. Sequeira ’05, North Richland Hills, Texas, for an apparatus to measure the propulsive efficiency of a flapping wing

Kenneth R. Wadeigh Award—for promising student interest and fostering faculty relations through scholarship and academic program innovation and excellence

Aeronautics and astronautics

Andrew Morsa Prize—for ingenuity and initiative applying computers to the field of aeronautics and astronautics
Chinwe P. Nwokorie ’04, Chicago, and Shen Qu ’04, Duluth, Ga., for designing a display evaluation procedure for an advanced terrain warning system

Younge Raustein Award—for a student who best exemplifies the spirit of Younge Raustein and in recognition of significant achievement in Unified Engineering
Laura O. Kauppila ’06, Espoo, Finland

David Shapiro Award—for pursue special aeronautical projects that are student-initiated and/or to support foreign travel to enhance scientific/technical studies
David A. Broniatowski ’04, Cleveland Heights, Ohio, to attend the International Space University summer program

Thomas M. Coffee ’05, Torrance, Calif., to study an integrated organizational and analytical tool for systems engineering


AIAA Undergraduate Advising Award
Professor Karen E. Wilcox

AIAA Undergraduate Teaching Award
Professor Karen E. Wilcox

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Kathleen M. McCoy ’04, Portsmouth, N.H., and Darlene A. Utter ’04 for their project on long-range visibility and driver braking reaction

James Means Award for Excellence in Space Systems Engineering
Philip N. Springer ’04, Racine, Wis., for analysis of low Earth orbit communications satellite systems with subsequent publication in the 21st AIAA International Communications Satellite Systems Conference and in the Journal of Spacecraft and Rockets

James Means Award for Excellence in Flight Vehicle Engineering
Charles T. Wesley ’04, Vernon Hills, Ill., for engineering analyses, systems testing and systems integration of the propulsion system in the 16.82c “Phoenix” quad-rotor aerocapstone project

Aeronomy and meteorics

Franzenn Gerber and Eberhard Heise Award—for outstanding graduate student in atmospheric sciences
Annie L. O’Dell ’05, Cambridge, Mass.

AIAA Undergraduate Teaching Award
Professor Karen E. Wilcox

AIAA Undergraduate Advising Award
Professor Karen E. Wilcox

Apollo Award—for the best undergraduate research project on humans in space or successful participation in a Course 16 design project
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Mary Lou and Richard W. Taylor Award—for outstanding achievement in design, building, and reporting on an undergraduate experimental project
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Signa Gamma Tau Society Graduate Teaching Award
Professor Dave J. Newman

Henry Webb Salisbury Award—for academic achievement
Glen P. Tournier ’04, Cary, Ill.

Aero/Astro Teaching Assistantship Award
Faye A. Joseph G, Hackett, Australia

MIT Tech Talk
Experimental Studies Group

Peter and Sharon Fiekowsky ESG Community Service Award—to undergraduates who have made an outstanding contribution to the ESG community

Susannah Dorfman ’05, EAPS and physics, Lebanon, N.J.
Claudia Gold ’06, political science, Boca Raton, Fla.

Todd Anderson ESG Teaching Award—to seniors who have demonstrated sustained excellence in teaching at ESG

Dana K. Sorenson ’04, CEE, Townsend, Mont.

Boit Manuscript Prize—drama
1st prize: Nancy Keuss ’04, physics, Plano, Texas
2nd prize: Amy Fisher ’05, BCS, Manalapan, N.J.

Boit Manuscript Prize—essay
2nd prize: Rachel Dillon ’04, writing, Cranston, R.I.
Alex Khrin ’04, EECS

Boit Manuscript Prize—fiction
1st prize: Arthur Musah ’04, EECS, Ghana
2nd prize: Jean Young Choi ’06, writing, Brookline, Mass.
Honorable mention: Eun J. Lee ’04, biology, Houston, Texas

Boit Manuscript Prize—poetry
1st prize: Aaron Farness ’04, mechanical engineering and creative writing, DeKalb, Ill.
2nd prize: Arthur Musah ’04, EECS, Ghana
Honorable mention: Amany Mahdi ’04, mathematics and English, 500-1000 A.D.

I, Austin Kelly III Essay Prize—for scholarly or critical essays in one of the humanities or some interdisciplinary combination

Virginia L. Corfess ’05, physics, Lowell, Mass., for “Invisible Emotions: Marital and Parental Relationships in Gaul and the Po Valley from the 2nd Century BC to the 5th Century AD”
Ethan M. Fenn ’04, mathematics and music, of Painted Post, N.Y., for “The Hebrides Overture, Fingal’s Cave and The Poems of Ossian”
Mahnir M. Ghorashi ’05, literature and music, Knoxville, Tenn., for “Re-Membering the Past: Memory and the Body in Toni Morrison’s ‘Beloved’”

I S A M

S. Klein Prize for Scientific and Technical Writing
1st prize: Monica W. Ho ’04, chemical engineering, Columbus, Ohio
2nd prize: Eun J. Lee ’04, biology, Houston

Kelly-Douglas Fund

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Kelly-Douglas Traveling Fellowships for Juniors
Jennifer J. DeBoer ’05, mechanical engineering and music, Western Springs, Ill., for research at the Bibliothèque du Film in Paris
Caroline A. Niziolek ’05, brain and cognitive sciences, Paris, N., for experimental work at a language laboratory in Marseille, France
Farhan I. Merli ’05, brain and cognitive sciences, Toronto, for cross-cultural research in Ndjeve Village, Uganda
Sinan A. Vogel ’05, biology, Raddif, Ky., for tropical disease research in Puerto Escondido, Mexico

IDEAS

Chlorination in Honduras—a system that automatically adjusts the chlorine concentration of water to its flow rate to ensure safe drinking water for a village in Iozola Oriental, Honduras
Will DelHagen G, EECS, Manhattan Beach, Calif.
Marta Fernandez Suarez G, chemistry, Guayaquil, Ecuador
Jamie Fleischfresser ’05, environmental engineering, Bainbridge Island, Wash.
Guy Hoffman G, media arts and sciences, Tel Aviv

Test Water Cheap—a device to allow communities in developing regions to test water quality frequently and cost effectively
Jahi Chandala G, physics, Cheshire, Conn.
Brittany Coulbert G, CEE, Seattle
Philip Hou ’04, management, Los Angeles

Parabolic Power—an improved design for a modular core unit that concentrates solar energy using a reflective parabolic trough for use in rural Lesotho
Daniel Ramage ’04, computer science and mathematics, Westfield, N.J.
Michael Yates ’04, economics, Doha, Saudi Arabia

Sistema de Alerta Temporal—an automated early-warning system for floods in the Rio Aguan Basin area in Honduras
Elizabeth Bashas G, EECS, Woodland, Calif.
Emma Brunskill G, EECS, Seattle
Vanessa Hsu Chen ’04, electrical engineering, San Jose, Costa Rica
Vicar Grau-Serrat, a consultant from Barcelona, Spain

Speakeasy—a community-based telephone referral service that allows immigrants to connect with volunteer translators and social workers
Tad Hirsch G, media arts and sciences, Boston

WearAnEye—a real-time, portable system that uses computer vision technology to help blind or visually impaired pedestrians cross streets
Meg Ayicinena G, EECS, San Mateo, Calif.
Sam Davies G, EECS, Tenafly, N.J.
Professor Leslie Kaelbling of EECS
Professor Tomas Lozano-Perez of EECS
Kevin Murphy, a postdoctoral associate in CSAIL

Boit Manuscript Prize—drama
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Farhan I. Merli ’05, brain and cognitive sciences, Toronto, for cross-cultural research in Ndjeve Village, Uganda
Sinan A. Vogel ’05, biology, Raddif, Ky., for tropical disease research in Puerto Escondido, Mexico

Writing and Humanistic Prize for Engineering Writing
1st prize: Monica Ho ’04, chemical engineering, Columbus, Ohio; Gem Albayrak ’05, biology, Istanbul; Carly Saylor ’04, EECS, Moon Township, Penn.; Edward Song ’05, chemical engineering, Lake Mary, Fla.
2nd prize: Sean J. Leonard ’04, EECS, San Diego
Honorable mention: Stephen Lee ’05, biology, Pittsburgh; Krish (Ketu) Parikh ’05, EECS and management, Dallas

Vera List Prize for Visual Arts
1st prize: Cecilia Ramos ’05 architector, Concord, Mass.
2nd prize: Tiffany Kanaga ’04, French and management science, Greenville, Del.

PHOTO / GIBRAN GORDON RAMSAY

Winners of Fiekowsky Awards given by the Experimental Study Group are Claudia Gold (left) and Sulki Dorfman.