Yunus to graduates:
‘Change the world’

2006 Nobel Peace Prize laureate Muhammad Yunus told graduating students at MIT’s 142nd Commencement exercises on Friday that they “represent the future of the world,” and urged them to spend at least part of their time in coming years creating a whole new kind of businesses to help make the world a better place.

Nature cooperated with MIT’s Commencement, but only after threatening to put a serious damper on the ceremony. The opening processional was delayed a few minutes by rain that had been pouring down through the early morning, but the skies cleared just in time for the ceremonies to proceed and for 2,335 graduates to receive their degrees.

In work that could at the same time impact the delivery of drugs and explain a biological mystery, MIT engineers have created the first synthetic nanoparticles that can penetrate a cell without poking a hole in its protective membrane and killing it.

The key to their approach? Stripes.

The team found that gold nanoparticles coated with alternating bands of two different kinds of molecules can quickly pass into cells without harming them, while those randomly coated with the same materials cannot. The research was reported in a recent advance online publication of Nature Materials.

“We’ve created the first fully synthetic material that can pass through a cell membrane without rupturing it, and we’ve found that order on the nanometer scale is necessary to provide this property,” said Francesco Stellacci, an associate professor in the Department of Materials Science and Engineering and co-leader of the work with Elizabeth Thomson.

PEOPLE

Schmidt named associate provost

Professor Martin Schmidt, of the Department of Electrical Engineering and Computer Science, will succeed Lorna Gibson in the post.

RESEARCH

Super sensitive

MIT chemical engineers have built the most sensitive electronic detector yet for sensing deadly gases such as the nerve agent sarin.
Langer a winner of Spain’s Asturias award

Institute Professor Robert Langer is one of five scientists to receive a top Spanish honor, the 2008 Prince of Asturias Award for Technical and Scientific Research. The five were recognized as “worldwide leaders in the creation of new materials for the benefit of mankind.”

Langer was cited for developing “novel biomimetic materials in the form of polymers, nanoparticles or chips which permit the controlled delivery of drugs throughout the human body.”

Each winner will receive a diploma, a Joan Miró sculpture, an insignia bearing the Foundation’s coat of arms and a cash prize of 50,000 Euros ($78,000).

“I’m deeply honored to receive this wonderful award. It’s a privilege to be considered in the same category as the past and current recipients,” Langer said.

The Prince of Asturias Awards have been awarded annually since 1981 in eight different categories: Technical and Scientific Research, Arts, International Cooperation, Communication and Humanities, Social Sciences and Letters and Sports and Tourism.

The Prince of Asturias Foundation was named for His Royal Highness the Prince of Asturias, heir to the throne of Spain. One of the main objectives of the Foundation is to uphold and promote “all those scientific, cultural and humanistic values that form the heritage of humanity.” The awards will be presented in the autumn at a grand ceremony chaired by H.R.H. the Prince of Asturias.

AWARDS & HONORS

MIT sailing master and coach Fran Charlebois received the prestigious Graham Hall Award for outstanding service by a college sailing professional recently at the 2008 ICSA National Championship. As recipient of the coveted honor, Charles was inducted into the Intercollegiate Sailing Hall of Fame.

Alan J. Grodzinsky, director of the Center for Biomedical Engineering at MIT, received one of five honorary doctorates from the University of Montreal during its Convocation on Friday, May 10.

Sergey Yekhanin, who graduated with his PhD from CSAIL/MIT in 2007, has been selected as the winner of the Association for Computing Machinery’s Doctoral Dissertation Award. The award is presented annually to the author(s) of the best doctoral dissertation(s) in computer science and engineering.

Blood drive June 23-27

MIT’s American Red Cross Team and Network will be conducting a blood drive June 23-27 in La Sala de Puerto Rico on the second floor of the MIT Student Center. All donors and volunteers will get a free Red Sox blood drive T-shirt.

For more information or to make an appointment, visit http://web.mit.edu/blood-drive/ww/

Super-sensitive and small: New MIT detector uses nanotubes to sense deadly gases

When a particular gas molecule binds to the carbon nanotube, the tube’s electrical conductivity changes. Each gas affects conductivity differently, so gases can be identified by measuring the conductivity change after binding.

The researchers achieved new levels of sensitivity by coupling the nanotubes with a miniature gas-chromatography column etched onto a silicon chip smaller than a penny. The column rapidly separates different gases before feeding them into the nanotubes.

The new MIT sensor is also the first nanotube sensor that is passively reversible at this level of sensitivity. To achieve this, the team needed to decrease how strongly the nanotube sensor binds different gas molecules on its surface, allowing the sensor to detect a series of gas exposures in rapid succession.

Using a newly described chemistry outlined in a separate paper published in January in the Journal of the American Chemical Society, Strano and co-workers showed that this can be done by coating the nanotubes with amine type molecules, which donate an extra pair of electrons to the nanotubes.

The coating allows gas molecules to bind to nanotubes but detach a few milliseconds later, allowing another molecule from the column to move in. With a network of these reversible sensors, a gas could be tracked as it spreads through a large area.

The lead author of the paper is Chang Young Lee, a graduate student in chemical engineering. Richa Sharma, another MIT graduate student in chemical engineering, is also an author of the paper. Adarsh Radasia and Richard Masel at the University of Illinois at Urbana-Champaign developed the microcolumn technology.

The work was funded by the Department of Homeland Security under contract to the Federal Aviation Administration and MIT’s Institute for Soldier Nanotechnologies. Characterization facilities used for this work were supported by the Department of Energy. Microcolumn and detector development was funded in part by the Defense Advanced Research Projects Agency.
Nanotechnology will enhance future telescopes

David Chandler

A new way of bending X-ray beams developed by MIT researchers could lead to greatly improved space telescopes, as well as new tools for biology and for the manufacture of semiconductor chips.

X-rays can provide astronomers with important information about the most exotic events and objects in our universe, such as neutron stars and black holes and neutron stars. But X-rays are notoriously difficult to collect and many interesting cosmic sources are too far, which makes collecting these high-energy rays difficult and time-consuming, even with telescopes on satellites far above our X-ray-absorbing atmosphere.

Now a group of researchers from MIT has fabricated a new, highly efficient, nanoscale Venetian-blind-like device that can capture and focus X-rays. The researchers are now working on mirrors slats per millimeter for use in future improved space-based X-ray telescopes. These so-called Critical-Angle Transmission (CAT) gratings feature dense arrays of tens-of-nanometer-thin, freely suspended silicon structures that serve as efficient mirrors for the reflection and diffraction of nanometer-wavelength light—otherwise known as X-rays.

New instrument designs based on these gratings could also lead to advances in field beyond astrophysics, from plasma physics to the life and environmental sciences, as well as extreme ultraviolet lithography, a technology of interest to the semiconductor industry.

This concept behind CAT gratings might also open new avenues for devices in neutron optics and for the defraction of electrons, atoms, and molecules.

Based on an invention by Ralf Heilmann and Mark Schattenhalter of the Space Nanotechnology Laboratory (SNL) at the MIT Kavli Institute of Astrophysics and Space Research, the daunting fabrication challenges were overcome by graduate student Minseung Ahn of the Department of Mechanical Engineering at MIT in a yearlong effort, with the help of financial support from NASA and a Samsung Fellowship.

Motivated by technology goals for NASA’s next-generation X-ray telescope, called Constellation-X, the new devices promise to improve more than five-fold upon the efficiency of the transmission gratings on board NASA’s Chandra X-Ray Observatory (launched in 1999), which were also built at the Space Nanotechnology Lab. The reason for this improvement lies in the fact that in the new design X-rays are reflected very efficiently at very small angles—akin to skipping stones on water. The CAT gratings are oriented with their sidewalls of the silicon slats, through the spaces between the slats. Also, in the earlier version the X-rays had to pass through a supporting substrate of polycrystalline, which absorbed most of the rays and reduced the grating’s efficiency.

The silicon slats—as thin as 15 nanometers, which is comparable to the smallest feature sizes still under development in commercial computer chip manufacturing—are parallel to each other and separated by as little as about 150 nanometers. The slats have to extend many micrometers in the remaining two dimensions. “Imagine a thin, 80-foot-long, 8-foot-tall mirror, with surface roughness below a tenth of a nanometer,” says Heilmann. “Then put tens of thousands of these mirrors next to each other, each spaced precisely an inch from the next. Now shrink the whole assembly— including the roughness—down by a factor of a million, and you have a good CAT grating.”

Recent X-ray test results from a prototype device, obtained with the help of Eric Gulickson of Lawrence Berkeley National Laboratory, confirmed that the new design met theoretical expectations. The results of this work were published in Optics Express (Vol. 16, No. 12) on Monday. They were also presented at the 52nd International Conference on Electron, Ion and Photon Beam Technology and Nanofabrication in Portland, Ore., on May 28, and will be presented again at the SPIE Conference on Astronomical Telescopes and Instrumentation in Marseille, France, on June 23.

Reunion giving surges past $100M

Nancy DuVergne Smith

MIT Alumni Association

Next, the streak, the show during Technology Day, June 7, when it rolled onto the Kresge Auditorium stage and introduced faculty creator Cynthia Breazeal SM ’99, ScD ’00. Affable, expressive and quintessentially high tech, Next exemplified the Institute in microcrime. The show opened with a personal, hour-long presentation, where the students set by government about energy and CO2 limits, limited natural resources and geographic shifts caused by rising sea levels,” said Associate Professor of Architecture Andrew Scott, a co-organizer of the forum. “We have to figure out how to retrofit existing cities, like Boston, to massively reduce energy consumption. In this urban environment, we have to retrofit existing cities to address the inevitable challenges of energy pricing, limited natural resources and geographic shifts caused by rising sea levels,” said Scott. “There are many targets set by government about energy and CO2 targets but how do we turn these into effective action? How can we effectively measure the carbon footprint over time at a city scale?”

Both symposia included a feature called Ten Slides/Ten Minutes, in which professionals associated with the built environment presented projects or research exploring aspects of the discussion topics. The keynote speaker at Monday’s meeting was Nicky Garvey, deputy mayor of London from 2004-2008.

Forum examines cities and climate change

The MIT School of Architecture and Planning and the Boston Society of Archi-

FACULTY TILLER FOR YOUR KIDS? I specialize in gifted children and gifted children with ADD, grades 4-12. Twenty years experience. Call me for more information or questions at 617-902-1933 sing-
a1@mit.edu

TUTORING FOR YOUR KIDS? I specialize in gifted children and gifted children with ADD, grades 4-12. Twenty years experience. Call me for more information or questions at 617-902-1933 sing-
a1@mit.edu

Final Tech Talk until September

The News Office will resume production of Tech Talk in September. For daily updates on MIT news, people and events, please go to http://web.mit.edu/newsoffice.

CLASSIFIED ADS

FOR SALE

House near Thomaston, Maine, minutes from ski slopes, lake, pond, and tennis. 3 BD, 2.5BA, 2,500 sq ft, wood floors, fireplace. $750/week June-Sept. 207-753-5757 or chorover@mit.edu.

Mount Desert Island, Maine—Ocean front ocean hideaway overlooking the bay, Bionicles and Knights Kingdom sets. Games for ages 4-6 and 7-9. Playmobil (police vehicles; subma-

RENTALS

Count SchoolHMellie, ABC's of Mathematics, up to 15 students, $75/hr, 617-921-6030. Seeking a small and dependable car for my teen-

MISCELLANEOUS

Seeking qualified students and staff for summer and corporate training programs offering hands-on web-based learning experiences and performance on standardized tests. Send cover letter and re-

June 11, 2008

PAGE 3

NEWS
COMMENCEMENT: Class of ‘08 graduates

Continued from Page 1

Citing his own experiences in going against all conventional wisdom in the pioneering creation of Grameen Bank in his native Bangladesh—the forerunner of what is now a multibillion-dollar worldwide trend in microloending—Yunus said such businesses have a fundamentally different philosophy than conventional companies that see their prime obligation as the maximization of profit.

What’s needed, Yunus said, is to “reformulate the concept of a businessman”—not to replace the present model, but to offer another alternative that people can choose to follow. Such new-style businesses, he said, would have as their goal not maximum profit but “achieving some predefined social objective.”

Creating such alternative socially conscious businesses, he said, “will bring a big change in the world.” And for Yunus, this is not just talk, but a history of real action: In addition to his now-famous bank, he has already created YVEs to provide a low-cost health-insurance program, help the millions of malnourished children in Bangladesh, and bring cell-phone service to Bangladesh and other developing countries, where most homes have no electricity, plumbing or telephone service.

He has even teamed with the giant microchip manufacturer to bring cell-phone service to Bangladesh and other developing countries, where most homes have no electricity, plumbing or telephone service.

Yunus has also helped to start “social businesses” including one to make yogurt that has added nutrients to help the millions of malnourished children in Bangladesh, another to provide a low-cost health-insurance program, a company to provide safe, drinking water “in a sustainable way to all the people who are faced with a water crisis,” an eye-care hospital, a shoe company and one to produce insecticide-treated mosquito nets to combat malaria.

‘A wonderful gift inside’

He has even teamed with the giant microchip manufacturer to create a company that will bring information technology to third-world countries, for health care and education.

Every graduate of MIT, he said, has the potential to design social businesses to overcome poverty, diseases, environmental degradation, food crisis, depletion of nonrenewable resources, etc. “The problems facing the world may seem daunting, he said—as they did when he started his first business more than 30 years ago—but big problems are often just an aggregation of little problems. And these little problems can often be tackled modestly, by setting up a ‘cute little business.’

Such a business may seem like a small contribution, but “if it works out, the whole world can be changed by replicating it in thousands of locations.”

All people, he said, “are packed with unlimited potential” and carry “a wonderful gift inside them … Our challenge is to help the poor unwrap their gift.”

MIT President Susan Hockfield reinforced the challenge to the 983 undergraduates receiving their bachelor’s degrees and the 1,352 graduate students receiving master’s and doctorate degrees. She described Yunus’ message as “do something optimistic,” which makes it possible to tackle a big, ancient problem such as poverty and also allows you to look at a problem as big and new and tangled as energy and climate change, and react not with fear, nor paralysis, but with the analytical curiosity and rigorous creativity of a community of disciplined minds.

“While MIT will miss these graduates, she said, “the world right now needs you.”

Picking up on that challenge, Phi Ho, president of the Class of 2008, who has already spent time working with underprivileged children in southeast Asia, said that among the lessons he and his classmates have learned from the “unique experience” of MIT is to “find unconventional answers to the problems the world faces today.”

He and his classmates, he said, “are agents of change for the future.”

Graduate Student Council President Leeland Ekstrom added that the typical MIT attitude is to “refuse to accept a ‘no,’ ” and always to want to “make it better, even if it’s good enough.”

‘Sun or rain, it’s still joyous’

When parents and friends first arrived at Killian Court on Friday morning and saw a downpour, some decided to stay indoors and watch the proceedings on closed-circuit television. But others were undeterred: “We started to watch indoors but we decided it wouldn’t be as much fun as being out here,” said Carol Loehmann, whose son, Greg, received his MBA.

Loehmann, who left Cheshire, Conn., at 6 a.m. with her family to make it to MIT in time, said that even with less-than-perfect weather, “It’s a joyous occasion. Whether there’s sun or rain, it’s still joyous.”

And many graduates found the Commencement address inspiring. “It was very idealistic, and I wish more people thought like that,” said Timothy Mwangi, who received his bachelor’s degree in electrical engineering and computer science. “He did make me think about trying to think a little bit more in a socially conscious way.”

Ultimately his message was that you can do anything,” said Alicia Jillian Hardy, who received her PhD in mechanical engineering. “If your focus is on helping people, then just get out there and do it,” she said.

If this generation can succeed in tackling these great problems, Yunus said, “then yours will be the most successful generation in human history.” That’s certainly a big challenge, but one that MIT’s Class of 2008 seems ready to take on.

Addional reporting by Anne Trafton

The Hooding Ceremony

Thursday, June 5

LEFT: MIT administration and faculty, along with Commencement speaker Muhammad Yunus, proceed down Massachusetts Avenue for the start of Commencement. RIGHT: Tai DaCosta, who received a BS in Art and Design in the School of Architecture and Planning, cheers on a friend just descending from receiving his diploma.

LEFt: James Dwight Molurkin IV hugs his mom, Sandra Lawson after the hooding ceremony at Rockwell Cage on Thursday afternoon. ABOVE: O. Patrick Kreidl, whose PhD thesis was in electrical engineering, is hooded at the ceremony in Rockwell Cage on Thursday.
Video, audio and more

For complete coverage of Friday’s Commencement exercises, including audio of both Muhammad Yunus’ and Susan Hockfield’s speeches and a photo slideshow, check out the News Office web site at http://web.mit.edu/newsoffice.
Resource Development, Alumni Association moving

MIT's Department of Resource Development and the MIT Alumni Association are scheduled to relocate to this building at 600 Memorial Drive this summer.

Making a splash

An MIT-designed building featuring water walls that can be programmed to display patterns and images is being unveiled this week at the opening of the Zaragoza World Expo in Spain. The Digital Water Pavilion, selected as Time magazine’s ‘best invention of the year’ in the field of architecture when its plans were announced in 2007, is the first of its kind and illustrates the potential of digital architecture to create spaces that dynamically adjust to people and conditions.

NANO: Stripes key to nanoparticle drug delivery

Continued from Page 1

Darrell Irvine, the Eugene Bell Career Development Associate Professor of Tissue Engineering,

In addition to the practical applications of such nanoparticles for drug delivery and more—the MIT team used them to deliver fluorescent imaging agents to cells—the tiny spheres could help explain how some biological materials such as peptides are able to enter cells.

“ar one understands how these biologically derived cell-penetrating materials work,” said Irvine. “So we could use the new particles to learn more about their biological counterparts. Could they be analogues of the biological system?”

When a cell membrane recognizes a foreign object such as a nanoparticle, it normally wraps around or “eats” it, encouraging the object in a smaller bubble inside the cell that can eventually be excreted. Any drugs or other agents attached to the nanoparticle therefore never reach the main fluid section of the cell, or cytosol, where they could have an effect.

Such nanoparticles can also be “chaperoned” by biological molecules into the cytosol, but this, too, has drawbacks. Chaperones can work in some cells but not others, and carry one cargo but not another. Hence the importance of the MIT work in developing nanoparticles that can directly penetrate the cell membrane, deliver their cargo to the cytosol, and do so without killing the cell.

Irvine compares the feat to a phenomenon kids can discover. “If you have a soap film and you poke it with a bubble wand, you’ll pop it,” he said. “But if you coat the bubble wand with soap before poking the film, it will pass through the film without popping it because it’s coated with the same material.” Stellacci notes that the coated nanoparticles have properties similar to the cell membrane—not identical—but the analogy is still apt.

Stellacci first reported the creation of the striped nanoparticles in a 2004 Nature Materials paper. At the time, “we noticed that they interacted with proteins in an interesting way,” he said. “Could they also have interesting interactions with cells?” Four years later, he and his colleagues report a resounding “yes.”

Stellacci and Irvine’s coauthors are Ajay Verma, Oktay Uran, Ying Hu and Suelin Chen of the Department of Materials Science and Engineering (MSE); Yuhua Hu of the Department of Chemical Engineering; Hse-Han of the Department of Chemistry, and Nicky Watson of the Department of Biology.

Irvine has appointments in the Department of Biological Engineering and MSE, and is a member of the David H. Koch Institute for Integrative Cancer Research at MIT. He was recently named a Howard Hughes Medical Institute investigator.

The research was funded in part by the NSF, the NIH and the Packard Foundation.

Schmidt to succeed Gibson as associate provost

Professor Martin Schmidt of the Department of Electrical Engineering and Computer Science has been appointed Associate Provost, Provost L. Rafael Reif announced last week.

Schmidt will succeed Lorna Ginnot, the Matoula S. Salapatas Professor of Materials Science and Engineering, who will return to her research in the Department of Materials Science and Engineering and will be taking a sabbatical next year.

“Professor Gibson brought a depth of experience, sound and thoughtful judgment, and a strategic perspec- tive to this position, and I am deeply grateful for her service,” Reif said. “I look forward to working with Professor Schmidt to build on the strong foundation she helped establish.”

Professor Schmidt SM ’83, PhD ’88 has been a faculty member since 1988. From 1999 to 2006 he served as the director of the Microsystems Technology Laborato- ries (MTL) at MIT. His teaching and research is in the areas of micro and nanofabrication of sensors, actuators, and electronic devices, microelectromechanical systems (MEMS), design of microelectromechanical systems and actuators, and micro/nanofabrication technology. He is the co-author of more than 60 archival journal publications and 110 peer-reviewed conference proceedings. His appointment will commence July 1.

The Associate Provost chairs the Committee for the Review of Space Planning (CRSP), which advises on space planning, allocation and renovations across the Institute. The position also includes responsibility for managing faculty affairs, including faculty development, renewal, and grievance policies and procedures.

During her tenure as Associate Provost, Professor Gibson oversaw the David H. Koch Institute for Integrative Cancer Research from program development through to the beginning of construction. Working with Vice President for Human Resources Alison Alden and her staff, as well as the staff in the Provost’s office, she also helped develop the recently announced program for faculty renewal. In addition, she chaired the Advisory Council on Neuroscience overseeing faculty searches.
Corporation names new members at meeting

The MIT Corporation, the Institute’s board of trustees, elected 10 term members and one life member at its quarterly meeting on Friday morning, June 6, before the Commencement exercises. Dana G. Mead, chair of the Corporation, announced the election results. All memberships are effective July 1.

The new life member is Arthur J. Samberg, who received an SB degree in Aeronautics and Astronautics from MIT in 1962. Samberg has been an Alumni Association nominee to the Corporation since 2003. He has served as Chair of the MIT Investment Management Company Board since 2004 and on two visiting committees. He received an SM in Aeronautics and Astronautics from Stanford University and an MBA from Columbia University.

It was also announced at the meeting that Antonia D. Schuman, Class of 1958, has been named the 2008-2009 president of the Association of Alumni and Alumnae of MIT. As such, she becomes an ex officio member of the Corporation. Schuman served a previous five-year term on the Corporation from 1995-2000 as an Alumni Association nominee. She succeeds Harbo Peter Jensen who returns to the Corporation for a new five-year term that will conclude in 2013.

As of July 1, the Corporation will consist of 71 distinguished leaders in education, science, engineering and industry; of those, 21 are life members and eight are ex officio. An additional 14 individuals are life members emeritus, participating in meetings but without a vote.

Ursula M. Burns
President, Xenex Corporation
Term: Five years
Education: SB 1980 (Polytechnic Institute of New York), SM 1981 (Columbia University)

Lawrence K. Fish
Chairman, Citizens Financial Group Inc.; Chairman, RBS America
Term: Five years
Education: Bachelor’s 1966 (Drake University), MBA 1968 (Harvard Business School)

Diane B. Greene
President and CEO, VMware Inc.
Term: Five years
Education: BS 1976 (University of Vermont), SM 1978 (MIT), MS 1987 (University of California at Berkeley)
Current MIT activities: Visiting Committee, Department of Biological Engineering

Helen Greiner
Chairman of the Board and Co-Founder, iRobot Corporation
Term: Five years (alumni association nominee)
Education: SB 1989 and SM 1990 (MIT)
MIT Awards: TR100 (Tech Review), 2004

Peter L. Slavin, MD
President, Massachusetts General Hospital (MGH); Professor of Health Care Policy, Harvard Medical School
Term: One year

Laura D’Andrea Tyson
Professor, Business Administration and Economics, Haas School of Business, University of California at Berkeley
Term: Five years
Education: EA 1969 (Smith College), PhD 1974 (MIT)
Current MIT activities: Economics Visiting Committee (2007-present)
Interview with the Dean

Adle Santos,
dean of the School of Architecture and Planning

Over the course of the spring semester, Tech Talk has brought readers a series of interviews with each of MIT’s five school deans. The final interview in this series features Dean Adle Santos of the School of Architecture and Planning. In the following interview with Sarah H. Wright of the MIT News Office, Santos discusses the school’s goals and challenges and the role it can play in the future of sustainable cities across the world.

Q: You have said that one of your immediate goals when you came here was to look at the programs and direction of the school. What have you done so far?

A: Well, for starters we’ve had a change of leadership in every division. Architecture, visual studies, the Media Lab, the Center for Real Estate. And we’re now in the process of hiring a new head in urban studies and planning. We’ve got new leadership all around.

Q: Architecture, DUSP and Real Estate have all received high rankings since you’ve been dean. Care to comment?

A: Architecture was critical. We really needed to bring the department up to its true potential, and it’s worked. We’re now ranked number two in the country. Which, you know, is terrific. People are starting to say “Wow, things are really happening at MIT; let’s find out what’s going on.” But we’ve got to keep that up. Urban studies and planning is already number one in the country, but there are still moments when we need to ask if our emphasis and resources are in the right places. The Center for Real Estate, the first of its kind in the country, again, needed to take a fresh approach, and now it has a new emphasis on global real estate development. The Media Lab has gone through its period of complete excellence and brilliance, inventing itself, and its motivations needed fine-tuning. I’m really excited about what I see happening over there now in the area of human augmentation—how to use technology to mitigate the effects of mental and physical disabilities.

Q: Do you have a guiding vision for the school?

A: Absolutely. The MIT ethos is about making the better world, right? Educating and training both the mind and the heart. That’s why we’re focused on the problems of rapid urbanization and city building. The other problem is that we don’t have exhibition space. I’ve been harping on this since before I arrived. It is a concern for maintaining the quality of our programs. We can’t have traveling shows, we can’t really do things that have a bit of a splash, because we have no place to do it.

Q: What are some of the school’s immediate problems?

A: An immediate problem we have is space. We’re very dispersed. Our faculty and programs are currently located in six different campus locations—reaching from Central Square to Kendall Square down practically to Memorial Drive and over to Massachusetts Avenue. It’s incredibly frustrating because we do not have those elements that are normal to an architecture school. The other problem is that we don’t have exhibition space. I’ve been harping on this since before I arrived. It is a concern for maintaining the quality of our programs. We can’t have traveling shows, we can’t really do things that have a bit of a splash, because we have no place to do it.

Q: What particular challenges is the school facing right now?

A: An immediate problem we have is space. We’re very dispersed. Our faculty and programs are currently located in six different campus locations—reaching from Central Square to Kendall Square down practically to Memorial Drive and over to Massachusetts Avenue. It’s incredibly frustrating because we do not have those elements that are normal to an architecture school. The other problem is that we don’t have exhibition space. I’ve been harping on this since before I arrived. It is a concern for maintaining the quality of our programs. We can’t have traveling shows, we can’t really do things that have a bit of a splash, because we have no place to do it.

Q: Has the school been sought out for city-building expertise?

A: Oh yes. I’ve just come back from Japan where I have negotiated a research grant for us to help in the building of sustainable communities. It’s an interesting problem—nobody’s really demonstrated how we deal with infrastructure, the water, the sewers, the roads. We’ve also been approached by a new consortium that wants to do this in India.

Q: What particular challenges is the school facing right now?

A: An immediate problem we have is space. We’re very dispersed. Our faculty and programs are currently located in six different campus locations—reaching from Central Square to Kendall Square down practically to Memorial Drive and over to Massachusetts Avenue. It’s incredibly frustrating because we do not have those elements that are normal to an architecture school. The other problem is that we don’t have exhibition space. I’ve been harping on this since before I arrived. It is a concern for maintaining the quality of our programs. We can’t have traveling shows, we can’t really do things that have a bit of a splash, because we have no place to do it.

Q: Would an exhibition space start the process of centralizing?

A: Yes. I’ve very interested that we should know what other faculty are doing. It turns out so is the dean of engineering, so we have gotten together around this idea that we need a place—like the new gallery at the MIT Museum, where we can display our work. I’ve actually started to make some diagrams of where this could be. It may fall on dead ears, frankly, but the fact is that we need a place where we can reveal MIT, not to the world at large—but also just to ourselves.

Q: Is there any place that does this now?

A: Yes. When we replaced the studio walls in our school with glass, it made an enormous difference. You can walk through our halls now and see what’s going on. That’s what this whole place should be like. Right now you have Lobby 13, which is a disaster. Between Lobby 13 and Lobby 10, worse than a disaster. And here’s an opportunity to do something that doesn’t have to be space-consuming, doesn’t have to be expensive, but it sort of reveals who we are and what we do, with changing exhibits. We need to show off the incredible work of our faculty and students.

Q: What about the Media Lab building?

A: It’s going to be magnificent. There will be a café on the top floor and there will be roof terraces and the views of the river and downtown. I suspect people will really want to be there. We’ll be bringing the visual artists over from N11-52 to join the Media Lab crowd. The Scheller Teacher Education Program will move and be near the Lifelong Kindergarten Group. And the Comparative Media Studies from SHASS will also be joining them there. With the List Gallery also in that building, we start to have a really interesting cluster of arts and media. I think that kind of synergy is really very exciting.

Q: Let’s shift to global matters. Can you tell us about the Beijing Studio?

A: We’ve been collaborating on the Beijing Design Studio with Tsinghua University for 22 years now. That’s a long time. Every second year there’s an open design studio that brings together our students and faculty from architecture and planning with students and faculty at Tsinghua. They spend approximately six weeks studying some area of Beijing and proposing design solutions. Last year, the Chinese government held an exhibition celebrating the two decades of work produced by this collaboration. Based on this studio, we developed the idea of an urbanization lab, called UOBLab—a research program focused on the problems of rapid urbanization and city building.

We have also had a design studio in Japan for the past 15 years. This year will be the 16th, organized through Shu Shu Kanda, one of our faculty.

Q: What’s the educational goal in all this?

A: Students get practical, hands-on experience globally. We pick emerging problems that are very critical, built around faculty and student interests. We have faculty and students from India who are interested in the problems that exist there. There’s strong faculty and student interest in China. Next we might pick another locus in Latin American. Maybe Mexico City.

And places like India and China aren’t just repeating old models that come from somewhere else. We’re really rethinking the whole paradigm. How do you build a city for 10 million people, just like that? The world has never done that before.