

Pres. candidate loses Senate seat

Three P/VP tickets debated on Sunday evening



GREG STEINBRECHER—THE TECH

The candidates for UA president and vice president participate in a debate in the student center on Sunday. Electronic voting will begin next Tuesday and end next Thursday; paper balloting will occur next Friday. For a video of the full debate, see <http://tech.mit.edu/V130/N11/uadebate/video.html>

By Maggie Lloyd
and Natasha Plotkin

STAFF REPORTERS

At 9 p.m. last night, UA presidential candidate Ian P. Tracy '11 was officially removed from his seat in the UA Senate for lack of attendance at Senate meetings, according to Senate speaker Tim Stumbaugh '12.

Tracy said that he is continuing his campaign for the

UA presidency, but that he "hasn't had the chance to sit down with [running mate Pall M. Kornmayer '11] yet to discuss our final plans and final decisions."

"We'll have our plan more fleshed out within the next few days," he said.

Tracy explained that he knew last term that he would not be able to devote much time to his Simmons Senate position because of other com-

mitments. He said he decided to run for the position regardless because there was limited interest in the seat among other Simmons residents, and he still "wanted to maintain some level of contact with the UA."

He acknowledged that his current situation "shows a lack of commitment."

Tracy also said that he would also probably be moving to a different dorm, most likely Burton-Conner, over the

next few weeks, and that "being a Simmons senator while in a different dorm would be inappropriate."

He said of his removal from senate, "I know this is a controversial event, but if [Kornmayer and I] were to win [the election], our time commitments would change radically next year."

Daniel D. Hawkins '12 was

UA Elections, Page 11

Lerman to leave MIT for GWU in July

Spent 42 yrs. at MIT

By Jiyeon Baek

STAFF REPORTER

Vice Chancellor and Dean of Graduate Education Steven R. Lerman '72 has announced that he will be leaving MIT to serve as provost of George Washington University, starting July 1.

In his decades as a faculty member and an administrator at MIT, Lerman spearheaded the creation of Project Athena, MIT's campus computing system, and contributed instrumentally to the development of OpenCourseWare, among other initiatives.

Lerman has been a member of the MIT community for over 40 years. Having first entered as an undergraduate in Course 1, he went on to earn a PhD in transportation systems in 1975 and then become a professor in the Department of Civil and Environmental Engineering.

He served as the MIT faculty chair from 2000 to 2002 and then again from 2006 to 2007, and became the dean of graduate education in 2007 and vice chancellor in 2008.

He has lived with his wife in the Warehouse, a graduate dorm, as housemasters for nine years.

According to the GWU's online news service, Lerman will oversee all student life related programs and offices as a chief academic officer and, as provost, will

Lerman, Page 12

MIT alum and employee charged with son's murder



WCVB-TV

Geoffrey V. Wilson '02, current Media Lab employee, has been charged with the first-degree murder of his six-month-old son. Wilson, 31, is an MIT alumnus and an administrator at the Media Lab.

MIT alumnus and Media Lab intellectual property rights manager Geoffrey V. Wilson '02 was arrested and charged with the murder of his 6-month-old son, Nathan, on Sunday night.

Nathan Wilson was left in his father's care in the family's home in Malden, Mass., while his mother attended church, the *Boston Globe* reported. The baby's mother returned home on Sunday night to find him unresponsive. After attempting and failing to contact Nathan's pediatrician, Geoffrey Wilson took the baby to Children's Hospital, where Nathan was later pronounced dead. His brain injuries and the bruises on his forehead, neck, and chin suggest that he had died from shaken baby syndrome, prosecutor Marcy Jackson said. Wilson, 31, admitted to shaking his son but claimed that he was doing so only gently to simulate the motion of a car going over a speed bump.

Wilson was arraigned Monday afternoon by Malden District Court Judge Lee G. Johnson and is being held without bail at the Malden District Court. He has pleaded not guilty and will next appear in court for a pre-trial hearing on March 29.

— Jessica Liu

How the human genome folds in 3-D

Lieberman-Aiden wins 2010 Lemelson-MIT Student Prize

By Ana Lyons

NEWS EDITOR

Until recently, the process of how genomic DNA neatly folds itself into the nucleus of a cell — twisting and contorting into a work of astonishingly compact molecular origami — had perplexed biologists.

When unstretched onto its two-dimensional, double-helix form, the human genome spans nearly two meters in length, yet it must fit inside the cell nucleus, which is only a hundredth of a millimeter in diameter. How exactly the genome can compress into an unknown

three-dimensional structure and retain some sort of underlying order, all while persisting tangle-free, remained a fundamental mystery in structural biology.

INSIDE
How is the human genome like ramen?

developed a new technique for creating 3-D genomic maps called "Hi-C." His results led him to theorize that the

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LEMELSON-MIT PROGRAM

Erez Lieberman-Aiden G invented a way to find out how the genome folds.

Student-cadets attend ROTC annual formal Military Ball

By Meghan Nelson

ASSOCIATE NEWS EDITOR

Cadets came dressed in their military best, in pressed uniforms emblazoned with stripes and ribbons, at last Friday's Military Ball, the MIT Reserve Officers' Training Corps annual formal social event.

Like any ROTC event, attendance at the evening's festivities was mandatory. Still...

Guest speaker three-star Lieutenant General Glenn Webster proffered advice and encouragement to the cadets, praising them for their hard work while alerting them to future sources of world

conflicts.

The ball, one of ROTC's rare joint-service social events and long-standing traditions, gathered together all the ROTC military services: Air Force, Army, Navy, and Marine. Meant to celebrate ROTC, increase inter-service bonding, and act as a forum to practice etiquette, ROTC cadets from the whole MIT division, which includes students from schools without their own ROTC programs such as Harvard, Tufts, Wellesley, filled the halls of the Kendall Square Marriott.

The ROTC cadets' uniforms were embellished with intricate details told

Military Ball, Page 6

IN SHORT

Registration for fourth-quarter physical education classes begins this Wednesday at 10 a.m. for undergraduates at mitpe.com.

A screen that will display information on Saferide arrival times has been procured and should be installed outside W20 by next week, according to MIT Facilities.

British Foreign Secretary David Miliband SM '90 will be speaking about the Afghanistan war in Kresge Auditorium at 3:30 p.m. on Wednesday.

E-mail us: news@tech.mit.edu.

SEEING GREEN

SimCity taught me how to build cities, but something was missing. Here's what the game left out. **OPN, p. 5**

GIVE FRESHMEN MORE FREEDOM

MIT should let responsible freshmen stay off campus. **OPN, p. 4**

YOST: HOW WE CAN FIX BANKS

The government has to regulate them, but how? And why?. **OPN, p. 4**



CLEAN ENERGY FOCUS OF CONFERENCE

At the fifth annual MIT Energy Conference, Senator Jeff Bingaman (D-NM) outlined a clean-energy future. **NEWS, p. 8**

SLOAN SPORTS ANALYTICS CONF.

Giants of sports management gathered to talk numbers on Saturday in Boston. **SPO, p. 16**

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CORRECTIONS

Sudeep Agarwala's article "Two Minds in One Work" from Feb. 19 was edited for clarity, but omitted and distorted some of the author's discussion and introduced errors. Biss and Goode's performance was very well executed, given that pianists often perform as so-loists (due to the timbre, history and range of the instrument). However, some works did not translate well into an arrangement for piano for two hands. The article as it appeared in *The Tech* was published without the author's final approval.

GUEST COLUMN

Let's reevaluate keeping freshmen on campus

Eliminate an ineffective policy and improve student life

By Diana Hsieh

The recent proposal to change the freshmen-on-campus policy has caused much debate within the MIT community. The administration first made on-campus housing mandatory for first-years after the death of a freshman from heavy drinking at a pledge party for two main reasons. First, the Institute claimed that the change would expose freshmen to a community outside of their immediate living group. Second, the major public backlash after the death surely played a role in the policy change. But while keeping freshmen on campus does help them integrate within the broader campus community, that more campus-oriented community often isolates freshmen from an independent living group in which they may feel more comfortable.

Looking back, freshmen-on-campus seems to appease the general public's outrage more than solving the problem of dangerous drinking at parties. According to a November 2002 article in *The Tech*, "Some Frosh Live in Fraternities," fraternities have since the start of the policy encouraged freshmen to unofficially move into their houses, designating some rooms specifically for freshmen. Many fraternities even keep empty beds for freshmen. Today, freshmen continue to visit fraternities to party, and MIT has conveniently turned a blind eye towards those who choose to unofficially live in their fraternities. The freshmen-on-campus policy has become a formality. It is unsuccessful in regulating freshmen drinking and has only a limited ability to keep freshmen on campus during their second semester. MIT has not solved the problem of freshmen and fraternities, but has rather hidden it under the blanket of an ineffective policy.

I do not deny that forcing freshmen to live on campus is effective in helping students adjust to the college environment. However,

is a year-long period of integration truly necessary? It is difficult to determine whether one semester is enough to experience the MIT campus life. But the popular practice of unofficially staying in fraternities indicates that many freshmen already feel comfortable with choosing a living environment. Although some MIT freshmen may still be adjusting to their newfound independence in the second semester, these freshmen can choose to stay on campus. MIT should give freshmen the freedom to choose where they would like the live during the second semester, especially since the second semester marks the first time freshmen are exposed to classes on a grading basis. A fraternity or sorority could become an important academic and social support network for freshmen.

Of course, the social networking involved in living with a fraternity or sorority could also negatively impact freshmen grades. In response to this possibility, MIT should limit moving to fraternities to freshmen who have passed all of their classes during the first semester. In other words, moving to a fraternity should involve the approval of freshmen academic advisors, and be a privilege given only to those who successfully adapted to MIT academically.

It is inappropriate to continue a freshmen-on-campus policy that is ineffective in regulating drinking and providing a fitting environment for freshmen. Freshmen should be able to experience "on-campus" life during the first semester and then be free to choose which community they prefer. A great source of fear MIT may have in allowing first-years to return to fraternities or other living groups is a sense of losing control over freshmen — many seem to believe that having freshman off-campus weakens MIT's authority over them. This is not true. Rather, allowing freshmen to continue unofficially leaving their dormitories is a much more serious security lapse. To cover liability issues

under a new policy, MIT should document all freshmen living in fraternities during the second semester. MIT could ask fraternities to follow a stricter alcohol policy, and severely reprimand non-compliance.

Although the new proposal to allow freshmen to move into FSILGs is promising, MIT needs to reconsider why such a new proposal is necessary. Supporters of the proposal believe that the policy could fix dormitory overcrowding and allow MIT to admit more students in the upcoming years. However, MIT should not push freshmen off campus to make room for more potential students. Instead, they should look for a more responsible pathway to find room for more students rather than degrading the quality of life of students already on campus. Of course, the opening of Ashdown to undergraduates would also alleviate dormitory overcrowding. However, as MIT's faces a budget crunch, the date of Ashdown's completion is uncertain. So in order for an FSILG first-year policy change to be effective in relieving overcrowding, MIT should not increase the class size until Ashdown reopens.

MIT needs to encourage an active cooperation between independent living groups and the Institute. It should not ignore those freshmen who leave their rooms every night to "unofficially" live in fraternities. Instead, it should give freshmen a chance to "officially" live in fraternities. MIT has failed in its responsibility towards freshmen, claiming that a weak policy actually protects freshmen from the very communities that could provide the support and companionship that many freshmen cannot find on campus. It is time for MIT to cast away a useless policy and give freshmen a chance to experience the college life, not the life of a student living in an overcrowded dormitory.

Diana Hsieh is a member of the Class of 2013.

Lessons from the crisis
What to look for in the upcoming bank reform bill

By Keith Yost

STAFF COLUMNIST

Before discussing banking reform, it is necessary to first understand why and how financial markets operate.

For sensible reasons, people do not typically set their consumption equal to their immediate production. Not only do they like to smooth out their consumption profile over time, but they would also like to borrow against their future labor to cre-

ate tools, machines, and skills (capital) that will enhance their productivity.

For the sake of expediency, I will lump a broad range of financial institutions, including insurance companies, under the umbrella term of "bank." A bank is a sort of mediator who matches creditors and borrowers, taking in deposits on one end, and investing them in the most promising opportunities on the other. A well-performing bank finds the best investment opportunities for their creditors, while a poorly

performing bank will invest in less optimal activities, and perhaps even destroy value.

Because of the intertemporal nature of bank activities, special considerations must be given to financial markets that are not given to typical goods markets. Creditors must be given guarantees that their contracts with the bank will be honored, and that their funds will not simply be stolen or blundered away. Also, because a

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Rules of the game

SimCity, urban planning, and the sustainability ideal

By Holly Moeller

I think my favorite childhood computer game — after the MS-DOS days of dinosaur building and Tetris — was SimCity. I spent hours staring down at my two-dimensional landscape, laying out residential, commercial, and industrial zones, and power lines and roadways to connect it all. I battled crime with police stations and natural disasters with exorbitant reconstruction. And while I never did scrape up the allowance money to upgrade to the three-dimensional version of the game, SimCity Classic (which you can now play for free online) kept me blissfully entertained through my middle-school years.

In the tradition of educational games, SimCity also taught me some basic lessons about city planning. Through trial and error, I picked up three critical facts: One, no one wants to live near commercial or industrial zones. Two, residential lots sell fastest when located far from the city and along bodies of water. Three, people actually hate traffic more than taxes, so make sure roads are everywhere!

I sorted through potential landscapes for island locales or plots with multiple of rivers, located my power plants far to the interior, and peppered my coastlines with residential areas. Well back from the desirable waterfront, I arrayed grids of industrial zones, clumping commerce together at the edges. Highways spanned the miles between citizens' homes and work, and my residents constructed high-rise towers and orderly shopping malls to their hearts' content.

At my computer screen in the late 1990s, I readily absorbed the 1960s urban planning dream: a car-happy city with futuristic towers soaring over green lawns bordered by

highways. Crime was down, approval ratings were up, and all my suburban homes were full. And, because I'd spent a happy childhood in suburbia myself, rarely venturing into the city and using a car for even the most mundane of errands, it never occurred to me that another layout might be more ideal.

Yet decades earlier — in fact, almost 30 years before SimCity transformed computer gaming — a New York City woman named Jane Jacobs had already transformed the fundamental design concepts that SimCity and my suburban upbringing trained me to espouse.

Ever heard of Jane Jacobs? If you have, you probably know she revolutionized urban planning through grass-roots citizens' initiatives and her writing (see "The Death and Life of Great American Cities," for example). If you haven't, then you're just about where I was four years ago, on an urban ecology field trip in college, walking down an eerily still suburban street on a Monday afternoon.

Jane Jacobs was, first, a keen observer. She watched the city streets around her and noted what made the most vibrant communities function: mixture. Imagine a busy city street. Along the sidewalk, coffee shops and delicatessens serve as meeting places for neighbors and passersby while also bringing commerce into the area. Families populate upstairs apartments, and children play in nearby local parks. Short blocks and narrow streets promote walking, not cars. People exchange smiles and greetings on the streets when walking to work or running errands. The community is self-policing: Heads always poke out windows at the sound of a commotion because people know and care about their neighbors. And,

with diverse uses — commercial and residential — someone is always “home”.

Contrast that with SimCity suburbia. If not for the meticulous landscaping, walking through a modern-day suburb would be like walking through a ghost town. These are the bedrooms of America: stately McMansions occupied by power couples and a child or two, miles from multi-story office buildings, day-care centers, and retirement homes. The fabric of society is fragmented into scraps of far-flung infrastructure, and our sense of community is fractured with it. In our marriage to cars and, ostensibly, freedom, we've fled our cities and built huge highways where our homes once were.

Yet thanks to the efforts of Jacobs (who forty years ago battled to stop New York from turning into a Los Angeles-esque maze of traffic and exit ramps) and others, we still have cities like our own Boston, where your legs and public transportation can get you everywhere you want to go.

Of course, city living isn't for everyone. Personally, I need to escape to the outdoors every few months or risk my sanity in the concrete jungle. But when I come back to within walking distance of a grocery store and live music, I gladly hang up my car keys and revel in the press of humanity around me.

Fortuitously, it turns out that thriving city communities are also good for the environment. Short blocks and short walks mean less vehicular temptation and less CO₂ (and other pollutant) emissions from burning fossil fuels. (Plus, city dwellers lead more active lifestyles, and thus tend to be slimmer and healthier.) And, while there is an energy cost to transporting goods into cities, it isn't followed by intensive sub-distribution in suburbia.

Cities generally promote high-density living, which means each person requires less infrastructure and less energy to maintain it (imagine the electric bill for cooling a five-bedroom colossus compared to a small but elegant city apartment). Additionally, because the same number of people live on less land, more open space is left over for agriculture, recreation, and conservation.

To top it off, the mixed-use approach Jane Jacobs espoused to promote strong community ties parallels the multi-use “green” buildings that city planners now advocate. Different users take advantage of the space at different times, smoothing a building’s energy draw over the course of a day and making efficient use of available infrastructure. It’s a level of elegant heterogeneity impossible in SimCity.

Of course, in spite of its shortcomings, SimCity remains a compelling and sometimes useful game. Many of the city management issues it addresses — crime, pollution, tax rates — are reasonable simulations and useful teaching tools. Newer editions, I'm told, also allow for green approaches and incorporate the subtlety of Jane Jacobs' commentary on healthy city communities.

Still, it's worth keeping tabs on what our upbringing teaches us — both the direct and obvious things, and the subtle, underlying assumptions about life in the suburbs and winning strategies. It's the basic, unexamined details that we must re-evaluate if we intend to make societal progress towards sustainability. Because that goal is no game.

Holly Moeller is a graduate student in the MIT/WHOI Joint Program in Biological Oceanography. She welcomes reader feedback at hollyvm@mit.edu. "Seeing Green" runs on alternate Tuesdays.

How the government should regulate banks

Banking reform, from Page 4

bank is in the business of loaning out funds to borrowers, it cannot maintain the ability to return 100 percent of its deposits back to its creditors at any given time. Should the bank encounter a period of unexpectedly high deposit demand (the most extreme of which is typically called a “bank run”), it may be unable to fully and immediately pay back its creditors, even if it would be able to do so in the long run.

Theoretically, such problems could be resolved by the free market through private third parties — one bank agrees to cover the deposits of another, or lends funds to a bank waiting on a longer-term repayment stream, but these approaches have practical limits, and it rightly falls to the government to guarantee deposits and act as a lender of last resort (typically with a penalty rate) to illiquid banks.

The government's proper role in financial markets is fairly straightforward. As a guarantor of deposits, the government must oversee bank activities and ensure that the bank is not placing guaranteed deposits at risk. As a lender, the government must ensure that it is not lending funds to banks that are unable to pay the government back, i.e. are insolvent.

To accomplish these goals, the government typically does three things:

First, it has a regulator that can oversee and evaluate bank holdings. This allows the government to determine when deposits are at risk, and recognize illiquidity from insolvency when lending.

Second, it has a formal mechanism for ending a bank that is unable to cover its depositors due to insolvency — rather than allow a poorly performing bank to double down on its positions and shift more risk onto depositors, the government will freeze it and broker a sale of its assets to private parties, or assume control of the bank and liquidate its holdings over time.

Third, it requires banks to maintain reserve, capital-adequacy, and leverage ratios. The simplest are reserve ratios — requirements that for every dollar loaned, the bank must maintain some fraction of that dollar on riskless reserve, ready to meet deposit demand. A reserve ratio gives the government regulator a greater margin of error to work within. At the extreme, if reserve requirements are set equal to a bank's guaranteed deposits as a fraction of total funds

(some “deposits” such as a bank’s equity, are not guaranteed by the government and can have their value fall to zero), the regulator’s job is reduced to merely detecting fraudulent accounting.

Similar in concept, but more nuanced, are capital adequacy and leverage ratios, which require banks to maintain asset profiles and debt-to-equity ratios that limit risk to guaranteed deposits. One can imagine them as intelligent reserve ratios — rather than having to hold on to some fixed ratio of riskless currency or treasury bonds, the bank can be credited for the risk of its holdings and the availability of non-guaranteed creditors to buffer against losses. For the same reserve ratio, a bank with zero equity and entirely high-risk holdings is a much greater threat to guaranteed deposits than a bank with lower risk assets (which are less likely to deviate from their expected value), and equity holders (who will eat losses in the event of asset underperformance). Some financial systems do not even use reserve ratios, preferring instead to rely entirely on capital and leverage requirements for their greater sophistication.

In the aftermath of the crisis, it is clear that the government failed, to varying extents, on all three counts.

On the first count, regulation and oversight, the government's performance may be described as mostly satisfactory, punctuated by a few impressive failures. The majority of financial institutions that have received funds through the bailout are paying back their obligations on time (and even earning the government money, to the extent that the bailout funds were offered with penalty rates), and many insolvent banks (most notably Washington Mutual) were caught in a timely manner and liquidated with little or no adverse impact on depositors or tax payers. That said, it is clear that in some instances, the government recognized insolvency far too late and accepted significant losses, perhaps as large as \$40 billion in the case of the American International Group (AIG).

On the second count, it has become apparent that some banks are “too big to fail.” This phrase is somewhat misleading — the government would have just as difficult a time dealing with the default of four smaller banks each with \$250 billion in assets as it would with a single bank of \$1 trillion. The trouble that arises is that we lack formalized legal mechanisms by

which to take over banks and manage them until such time as they can be liquidated. A small bank can be dealt with quickly, but it is impractical to attempt to liquidate \$1 trillion in assets simultaneously — such an action would lower asset prices and exacerbate the challenge of recovering depositor funds. Instead, the bank would be placed into receivership or nationalized, and bank operations would be performed by the government or a contracted entity until such time as they could be unwound or sold off. Where formal mechanisms exist, as with savings and loan associations such as Washington Mutual, the government has been successful. Where they don't, as with insurance corporations such as AIG, the government suffered losses.

On the third count, the government's performance has been the most disastrous of all, and perhaps can even be blamed as the ultimate cause of the crisis. A credit rating agency (CRA) evaluates the risk of different debt-based assets and assigns them ratings. These ratings then factor into the formulas used by government regulators to determine capital adequacy. For a given level of capital, reserves, and equity, a bank could meet its capital adequacy requirements (ie. demonstrate that it is properly safeguarding guaranteed deposits) by holding on to a mixture of AAA and C- debt, or it could hold mostly BB debt.

The problem is when a CRA misjudges the risk of an asset. If CRAs grade a risky asset (say, subprime mortgages) as AAA when the true underlying risk would make it closer to BBB, banks, even if they do not agree with the CRA's judgment, have an incentive to hold more of the misrated asset — that is to say, even if they properly understood the asset's true risk-adjusted rate of return, they would still prioritize holding it over other assets because it would allow them greater leeway to acquire riskier, higher return assets with the remainder of its portfolio. Thus, in their role as pseudo-regulatory bodies, CRAs create correlated biases within the financial system (not just within the U.S, but across all financial markets that tie capital ratios to the CRA's risk assessment), and one convincing interpretation of the financial crisis is that the misjudgments of a few select players created a system-wide bias in favor of complex, and inaccurately rated mortgage-backed securities that misallocated real investment and created a sudden credit crunch when the securities

were re-evaluated.

The House and Senate are now in the process of wrangling over measures (such as the strength of a new consumer protection agency) that are tangential to true financial reform. Instead, they should shift their attention to delivering on three core points:

First, we must strengthen our regulation and oversight so as to catch and liquidate future AIGs before they socialize losses. This will likely mean the creation of a “super-regulator” under which our current patchwork of regulatory bodies will be unified. This regulator can either be placed within the Federal Reserve (thus leveraging the Fed’s unique capabilities and related duties), or outside (better insuring the regulator’s independence and strength).

Second, we must create formal mechanisms by which insolvent bodies can be taken over and sold off. Weeks or months of inaction can mean billions in further losses to the taxpayer, and it is unacceptable that we lack means of dealing with the default of some of our largest financial institutions, such as insurers. At a minimum, analogues of the Federal Deposit Insurance Corporation's process of receivership should exist for all classes of financial organizations, and it is advisable that these responsibilities should be centralized within a single organization trained to manage and liquidate assets over long time periods.

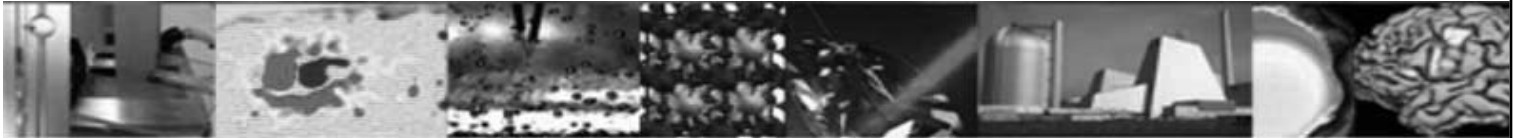
Last, as important as capital ratios are to modern banking, we must reform the role that private CRAs play in determining those requirements. The least we can do is bring CRAs under a system of oversight to ensure honesty and accuracy in their assessments — it is worthwhile to also consider the creation of an independent government institution, either as a replacement to, or a complement of, the existing private agencies. But even an independent and accurate rating agency can make mistakes, and so besides strengthening the ratings, we should also take steps to reformulate our capital reserve requirements so as to compensate for the potential of correlated, system-wide biases.

It is easy, given the punitive attitude being taken towards bankers, to ignore systemic reform in favor of satisfying populist pet-peeves. But while curbing executive pay may be more rewarding to legislators next November, in the long run, we need to tackle the systemic issues if we are to put our house in order.

Solution to Sudoku (Easy) <small>from page 11</small>								
2	1	6	3	4	8	9	5	7
5	4	8	7	9	6	2	1	3
3	7	9	5	2	1	6	4	8
7	9	5	2	6	4	8	3	1
6	8	1	9	3	7	5	2	4
4	2	3	8	1	5	7	9	6
1	6	2	4	8	9	3	7	5
9	5	4	6	7	3	1	8	2
8	3	7	1	5	2	4	6	9

Solution to Sudoku (Hard) <small>from page 11</small>								
2	9	4	7	3	1	6	8	5
7	8	3	5	2	6	9	4	1
6	5	1	4	8	9	2	3	7
3	4	8	9	7	2	5	1	6
9	6	5	8	1	4	7	2	3
1	2	7	6	5	3	8	9	4
5	7	2	3	4	8	1	6	9
8	3	6	1	9	5	4	7	2
4	1	9	2	6	7	3	5	8

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**UPDATE ON SUDAN:
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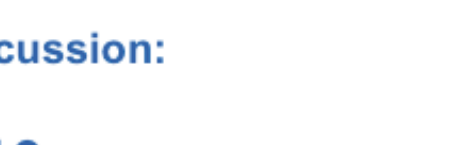
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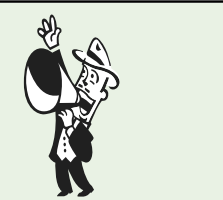
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Solution to Crossword
from page 10

PUB		CHARON		STAR
ERE		AEROBE		TODO
EGG		DRAWING		ONMY
LESSEE				EROTIC
		ENTAIL		ALONE
FINE		COMMAND		
ASIDE		IPSE		AMAT
MAKED				OBLIGE
EYED		ACHE		OWNER
		OFLANGUAGE		I
CLASP		UNDULY		
ALLIES				NOSIER
SAID		NOTHING		STE
KNEE		WHITEN		ATE
SONS		NOMORE		OAK

Award-winning work shows genome has fractal form in 3-D

Lieberman, from Page 1

structure of the human genome follows a fractal-like pattern, forming super-dense, knot-free “globules of globules of globules” in order to overcome their troublesome spatial and entanglement problems.

For leading this groundbreaking research, Lieberman-Aiden was awarded this year’s \$30,000 Lemelson-MIT 2010 Student Prize last Wednesday at a ceremony held in the Bartos Theater at the MIT Media Lab.

In contrast to previous “equilibrium globule” model of the human genome — where related regions often occur far apart in three dimensions and various components are highly entangled — Lieberman-Aiden’s “fractal globule” model suggests that the genome separates into two clear compartments: one where stretches of DNA are known to be active, and another where DNA is inactive and stowed away for future use.

Whether or not this organizational model will hold for other cell types, however, is currently unclear.

Lieberman-Aiden was also recognized by the Prize committee for his linguistics research (which appeared on the cover of *Nature* in 2007), for founding a new field of mathematical biology known as “evolutionary graph theory” (published in *Nature* in 2005), and for developing an electronic insole for diagnosing poor balance in the elderly (called the “iShoe”).

Other finalists were Barry M. Kudrowitz and Amos G. Winter, both current Ph.D. students in Mechanical Engineering.

According to the Lemelson Foundation, the \$30,000 Lemelson-MIT Student Prize is awarded annually to “an MIT senior or graduate student who has created or improved a product or process, applied a technology in a new way, redesigned a system, or demonstrated remarkable inventiveness in other ways.”

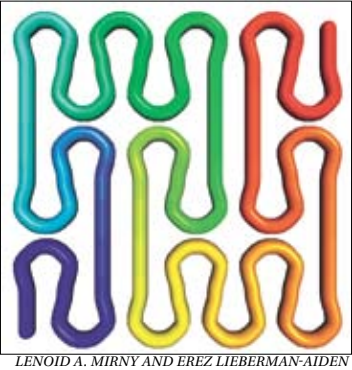
Students apply to the competition in an intensive process that requires essays and letters of recommendation. A panel of ten MIT judges who are “alumni including scientists, technologists, engineers and entrepreneurs” then choose the winner.

“I was very, very excited,” said Lieberman-Aiden.

Applications are now being accepted for the 2011 Lemelson-MIT Student Prize. Full details on the application process can be found here: <http://web.mit.edu/invent-a-student.html>

How Hi-C Works

To develop the “Hi-C” method — which constructs three-dimensional maps of entire genomes — Lieberman-Aiden worked with postdoctoral student Nynke van Berkum of UMass Medical School, and their ad-



LENOID A. MIRNY AND EREZ LIEBERMAN-AIDEN

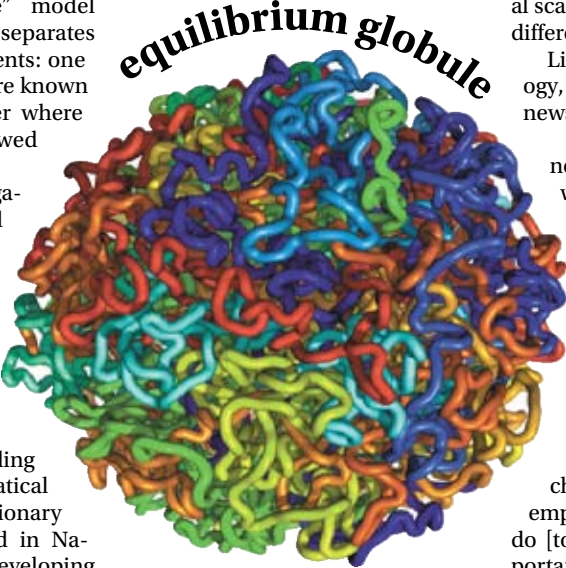
Peano curves
Discovered by Giuseppe Peano in 1890, Peano curves are a class of one-dimensional space-filling curves that densely fill higher dimensional space. Lieberman-Aiden, winner of the Lemelson-MIT Student Prize, recently published a 3-D map of the genome that suggests long stretches of DNA fold into Peano-curve-like structures.

visors Eric S. Lander and Job Dekker. The team also collaborated with Leonid Mirny’s group (in the MIT Department of Physics and Harvard-MIT Division of Health Sciences and Technology) as well as graduate student Maksim V. Imakaev to simulate of the dynamic behavior of the fractal globule.

“I’ve thought about [the idea] for quite some time,” Lieberman-Aiden said.

“Earlier in 2007, I saw a talk where I heard it took six months to figure out that two pieces in the genome were touching,” he said. “I remember thinking ‘gosh, that’s a really long time.’”

After seeing this talk, “I thought we could do better and take advantage of



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Equilibrium globule model

The “equilibrium globule” is an older model that describes how the genome might exist in three-dimensions. Unlike in the “fractal globule” model, here individual strands are highly entangled and regions nearby along the chain are far apart in 3-D. In this image, nearby regions on a chain of DNA are indicated using similar colors.

modern sequencing technology,” he said.

Based on these initial ideas, Lieberman-Aiden and his colleagues developed their “Hi-C” method, which uses formaldehyde to freeze linkages of DNA that are far apart in the linear genome, but adjacent to each other in 3-D.

The linked pieces of DNA are then marked with biotin, extracted, and mapped onto the reference copy of the human genome to determine which loci neighbor each other.

To complete the process, a computer cross-references neighboring gene pairs and assemble the genome’s 3-D portrait.

In Lieberman-Aiden’s words, Hi-C is like “figuring out who is friends with who.”

“Imagine one day there is a security breach on Facebook, and all the pictures were now leaked to the public,” he said. From the leaked data, you can see if there are patterns where people show up in the same pictures.

“If people keep showing up in the same pictures over and over again, you can concluded that they’re probably friends,” he said.

“It’s the same idea is behind the 3-D technique, but instead of determining friends, we’re determining who’s nearby in 3-D space,” he said. “We know the 1-D sequence of the human genome, so we can use this as a reference when we reconstruct what the 3-D architecture must be like.”

Lieberman-Aiden also posted an interpretive dance of how the technique works, which can be found on YouTube at: <http://www.youtube.com/watch?v=06UouUmuEbw>

Local biochemical vs. global spatial modifications

“A very interesting idea at the core [of this research] is that all

cells have the same genome, but perform very different functions,” Lieberman-Aiden said. “There’s an incredible variety of functions among cells, despite them all having the same information.”

In the past, differing function “has all been associated with local biochemical modifications: biochemical changes at certain sites in the genome, making certain [information] get turned on and off,” he said.

For example, “by adding or subtracting methyl groups, you can introduce instructions saying things like ‘you should express this more,’ but these biochemical changes are all occurring locally.”

But “here we find that it’s actually spatial modifications that can influence expression,” on the “global scale,” he explained. “It’s a totally different type of modification.”

Lieberman-Aiden used an analogy, likening the genome to a newspaper.

When thinking of the genome, “imagine a paper with writing on it, maybe even a newspaper....maybe even *The Tech*,” he said.

If everything on the page you were reading were the same dull font, you’d start reading somewhere at random, with no idea of what was most important that day, he said.

Suppose you’d like to change how various things are emphasized. “One thing you can do [to emphasize what’s most important] is underline things, make boxes around words — make various local modifications.”

“These modifications would tell you ‘Ahh...I should pay attention to this,’” he said.

In a newspaper, these modifications might be the style of a headline or a box of color, and in the case of the genome, these would all be biochemical modifications.

But then say you realize there’s also another way to emphasize different things, which would affect the organization of the contents more globally: “Let me fold the paper in little ways and actually change what appears on the front page.”

Just as the different types of cells fold their genomes differently depending on their function. “Depending who you are and what you want to read about, you might fold the newspaper in different ways,” he said.

For example, “if you’re trying to sell the paper at a newstand, you might fold the paper in one way. But if you’re the president of the MIT origami club, you might decide to fold it into a crane instead.”

Similarly, if you put different sections in the front, you’ll get different newspapers, explains Lieberman-Aiden.

For example “If you put business in front, you’ll have the Wall Street Journal.”

And in the case of the cell, “in doing these reconfigurations [of the genome], you can control what’s on and off and thereby change the function of the cell as a whole.”

“It’s another type of way to modify a sort of universal substrate, and the genome is basically doing the same thing....different ways you configure the genome could give you different functions or identities,” he said.

Human genome is organized like a library...made of ramen

Lieberman-Aiden’s and his team also zoomed in further, examining how the genome folds at the scale of a megabase, or one million of the genome’s biochemical ‘letters.’ The question was: “How does this megabase fold up?”

To help think this question, Lieberman-Aiden recalled an analogy that had been suggested to him by Leonid Mirny, Professor of Physics

and Health Science and Technology. “A genome contains information, a library of information.”

In this case, “you can imagine that [the human genome] should therefore be organized like a library,” he said.

“How should you organize a library? Well, you want it to be compact: everything is in one place. You want it to be organized: books on similar topics should be physically near each other. And you want it to be accessible: when you find the book you want, it shouldn’t be behind glass; you should be able to pull it off the shelf, read through it, and then put it back the same way you found it.”

Knowing this, the next question he said one might ask is: “how might one design such a library?”

“It turns out the standard way that a polymer might fold is totally incoherent with that [ideal library]; it’d be dense, but it would be totally disorganized and completely knotted,” he explained.

And “because it’s highly knotted, the information isn’t at all accessible,” he said.

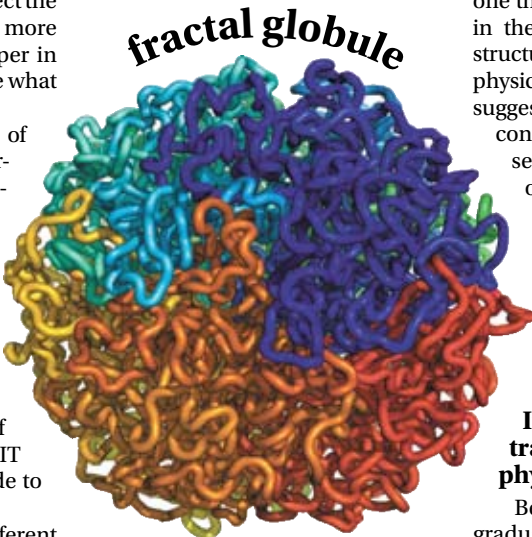
But his Hi-C data, suggests that the genome forms an unknotted macroglobule or what the team calls a “fractal globule” — which interestingly, Lieberman-Aiden says in many ways is like a package of ramen noodles.

“It turns out actually that the fractal globule pretty deeply resembles the model of uncooked ramen noodles,” he said. “You can contrast this with the classic polymer structure, which is the arrangement that the noodles take once you’ve cooked them.”

If you “turn up the heat, and the noodles are going to oscillate and wiggle...and in the process they’ll get deeply, deeply entangled,” he said.

According to Lieberman-Aiden, “this is similar to the classic polymer conformation,” called the “equilibrium globule model.”

In the ramen analog



LENOID A. MIRNY AND EREZ LIEBERMAN-AIDEN

Fractal globule model

Lieberman-Aiden’s new technique for creating 3-D genomic maps (Hi-C), gave him evidence him to theorize that the structure of the human genome forms a “fractal globule.” Here the genome forms super-dense, knot-free “globules of globules of globules,” which allows for regions in 1-D to also occur nearby in 3-D. Nearby regions are indicated using similar colors.

of the equilibrium globule model of the genome, “the most salient property was that if you stick a fork in them, you can’t pull apart one or two noodles: you end up pulling out a whole clump because they are so entangled.”

“The fractal globule module is more like the uncooked ramen, whereas the classic equilibrium model of condensed polymers is more like the cooked noodles,” he said.

“Space-filling fractal curves pack space very, very densely, but can do this without knotting,” he said.

If you want to access something

from a fractal globule structure, “you can just pull out a little piece and stretch it out to examine it. When you’re finished, you can just crumple it back up, and put it back where it came from,” making their use especially advantageous in the genome.

As one additional property of the “fractal globular” model — like in the case of ramen — is “if something is nearby in 1-D, it will be nearby in physical space,” he said.

“This may be why genes that are related in function tend to cluster in 1-D; by doing so, they are actually forming a spatial cluster when they fold up in 3-D.”

Peano curves appear in genome

Lieberman-Aiden’s research showed that the human genome likely forms fractal-like structures, but that’s only the half of it.

These fractals can then be reduced down even further to “Peano curves” in order to store less often-used genes and pack them more densely — a type of curve which Lieberman-Aiden says has a particularly interesting history.

As the first person who discovered such a curve, back in 1890, Giuseppe Peano was motivated by mathematics of the time to construct what Lieberman-Aiden calls “an extremely, extremely peculiar curve.”

Lieberman-Aiden said the Peano curve is what’s known is mathematics as a “space-filling curve.”

“Even though it is one dimensional, it can fill space so densely that it resembles higher dimensional objects,” he said. The discovery of this type of curve “blew mathematicians minds, and it really messed with their ideas of dimension.”

But after “Peano constructed this thing, and it led to a lot of rethinking of basic questions in math, eventually the mathematical agenda moved on.”

“It never really occurred to anyone that any actual existing contour in the world would resemble this structure,” he said, “until a team of physicists, nearly 100 years later, suggested that the initial state of a condensing polymer might resemble a Peano curve. But the observational evidence was limited until now.”

So for Lieberman-Aiden, a trained mathematician, to discover that the human genome may actually incorporate these curves is especially exciting.

Influence of cross-training in math and physics

Before coming to MIT as a graduate student, Lieberman-Aiden studied mathematics, physics, and philosophy at Princeton as an undergrad.

When asked about the influence of this training on his interdisciplinary work in biology, he said that it doubtlessly contributed to his current views on research.

“I think that the analytic techniques you learn by doing math and physics are very powerful and really can help you,” he said.

“It really helps me usually when I’m analyzing data; sometimes I’m not really straining myself because I got really comfortable with thinking quantitatively as an undergrad.”

“Because of background, that actually means that I have an extra gear or two,” he said. “If I find a problem where I think that there might be a good opportunity, I’ll use that extra gear. It also means that the extra exposure to mathematical and physical techniques and literature exposes me to ideas like the fractal globule,” he said.

After completing graduate school, likely within the next year, Lieberman-Aiden said that he will continue his research on Hi-C on a Harvard Junior Fellowship at the Harvard Society of Fellows.

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Presidential candidates talk transparency, dining at debate

UA Elections, from Page 1

appointed to fill Tracy’s seat by Simmons Hall president Christina R. Johnson ’11. Hawkins will represent Simmons for the rest of the Senate term.

According to UA Senate bylaws, a senator who misses more than two consecutive senate meetings will be assumed to have resigned.

In such cases, the president of the represented constituency will be notified and must appoint a new senator.

The presidents of the constituencies of five absent senators, including Tracy, were notified of their senators’ assumed resignations on Sunday evening.

By last night at 9 p.m. only the Simmons president had responded to this notification with a new Senate appointment.

Tracy, Kornmayer, and two other pairs of candidates debated their opinions on budget cuts, campus dining, and communication between administrators and students at the Undergraduate Association Presidential and Vice Presidential Debate on Sunday.

The other candidates for UA President are Vrajesh Y. Modi ’11 and Ariel A. Torres ’11; their running mates are Samantha G. Wyman ’11 and Jarrett R. Remsberg ’11, respectively.

Three tickets debated on Sunday

On Sunday night, candidates sparred at the UA Presidential/Vice Presidential debate.

In his opening statement, Modi described intentions to digitize add/drop forms, improve Saferide and freshman advising, create a UA blog, and run UA meetings in dorms instead of at the student center, and hold weekly meetings with leaders of other student government group such as the Interfraternity Council, Panhellenic Association, Dormitory Council, and Living Group Council.

Tracy and Kornmayer said they would work to run UA meetings more efficiently, digitize problem set submissions to reduce paper use, and investigate new dining options for the student center.

Torres said he would work on “dealing effectively” and “meeting proactively” with the administration at all levels — “Susan Hockfield if I can,” he added. He said he would help students become better informed of campus proceedings, since looming budget cuts make this a “very critical time for undergrads.”

Candidates responded to questions about the student body’s apparent lack of interest in the UA, an issue brought into focus last week as only one president/vice president ticket — Modi and Wyman — had filed for candidacy by the initial March 1 deadline set by the UA.

Tracy and Kornmayer joined the race as official candidates by the extended March 4 deadline, whereas Torres and Kornmayer are running as write-in candidates on the ballot.

At the debate, Kornmayer explained a need for increased transparency to let students know what the UA is doing, while Torres said that there is already enough transparency, but that available information must be better publicized.

The UA posts meeting minutes online, but “no one really goes to the UA website,” Ariel said.

Wyman listed writing a UA blog and running UA meetings at dorms as two ways she and Modi would work to keep students in touch with the UA.

Candidates differed on which issue they thought was the most important facing the student body. Tracy cited a lack of a “strong link between the UA government and living group governments.” Runnnng mate Kornmayer said that link could be strengthened by visiting FSILG’s across the river.

Torres and Remsberg said that the administration is “out of touch with students” and that a “well-informed student body” mixed with “increased communication” will put pressure on the administration. “Apathy makes it that much easier for administration to ignore us,” Ariel said.

Torres, later in the debate, expressed a need to work with The Tech on a regular column about the UA, to which members of the audience responded, “it already exists!” The Tech publishes a brief from the UA in the Opinion section on Fridays.

Wyman said upcoming budget cuts will most affect undergrads, and called for “a fair, transparent and open process” with a “data-driven approach” as MIT makes these decisions.

On the issue of dining, all candidates stressed that any changes to the current system should accommodate students who get their food in different ways.

Remsberg classified MIT students into three categories based on their dining preferences: Those who opt out and rely on meals from FSILGs, those who have Preferred Dining, and those that cook for themselves.

Torres said he was “disappointed with how the administration dealt with the Blue Ribbon Dining Committee” and thought that the UA recommendations were “more supportive and in touch with needs of students.” The Blue Ribbon Dining Committee called for a \$600 declining balance dining plan, while the UA suggested the elimination of mandatory dining membership and the installation of a centralized dining hall.

Wyman also complemented the UA’s work on analyzing students’ dining preferences.

Modi said that he and Wyman “support creating system that meets the needs of each individual living group.”

Tracy said he supported of the Institute-wide Planning Task Force report’s recommendation to reduce the financial aid allocation for food, a proposal which received a net 84 “thumbs up” vote on the UA website.

Tracy and Kornmayer said they were concerned that increasing the mandatory dining fee would cause freshmen to choose their dorm based on dining costs, not their fit with the dorm’s culture.

When asked what they thought were the most important recommendations from the Planning Task Force report, candidates agreed that proposed changes to add and drop dates would restrict undergraduates’ flexibility and freedom with choosing classes.

Tracy said that the proposal to install gas and electricity usage meters in dorms was important because it would help students take responsibility for their energy use.

One question from the audience asked the candidates what the UA would do to reach out to students who “don’t live in or care about the dorms.” Wyman explained that she and Modi have talked to IFC leaders about engaging such students, while Kornmayer said dinners and house meetings are good opportunities for direct communication.

The debate was jointly organized by The Tech’s editorial board and the Undergraduate Association, and moderated by Tech opinion editors Ethan A. Solomon ’12 and Joseph R. Maurer ’12.

After the debate, Eric A. Del Castillo ’13 said he thought the discussion “was pretty insightful.” “It seems like all the candidates have a clear plan as to where they’re headed,” he said.

Kevin A. Rustagi ’11 said, “I liked the fact that they talked about dining, but I wish that was more flushed out,” since to him dining is a “more pressing issue” than some of the other topics of the debate.

Tom M. Cervantes ’11 said he was impressed by the focus on student involvement throughout the debate. “I was happy that they had a lot of the student questions, both right in here and online. Been more aware of what the UA does through the year, curious what the candidates would have to say, especially since there was only one pair running originally.”

The debate was broadcast live online at <http://tech.mit.edu/live> and the recording is available on the Tech website at <http://tech.mit.edu/V130/N11/uadebate/video.html>.

Electronic voting runs from Tuesday, March 16, 12:00:01 a.m. to Thursday, March 18, 11:59:59 p.m. Paper ballots will be available in Lobby 10 on Friday, March 19, 9 a.m. to 4 p.m. The candidates’ platforms are available at <http://vote.mit.edu>.



PETER H. RIGANO

John Paul Pitts, vocalist and guitarist for Surfer Blood, performs in Rhode Island on Wednesday. Surfer Blood is a indie and pop band from West Palm Beach, Florida.

The fun with us never ends!

Join us this week for:



7:10PM Teigami Bachi 1-3

In the magical of world Amberground, a young boy sets out to carry mail through the dangerous wastelands between the towns of his world.

8:55PM Mobile Suit Gundam: The o8th MS Team 9-13

It is time for the o8th MS Team’s final battle. Will Shiro and his comrades find Zeon’s secret base and destroy the top-secret mobile armor in time or will Shiro have to spend the rest of his days known as a traitor to the Federation. Come and watch with us to find out!



11PM Astro Fighter Sunred 1-4

Astro Fighter Sunred, a fierce and merciless super hero, is the only one that can protect us from the Evil Florsheim Army, a group of considerate and cheerful villains!

March 12th, room 4-237

Pizza sales at 7:35, serving at 8:35

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MENG HENG TOUCH—THE TECH

Andy Tsao ’13 competes in the final round of the 3x3 Rubik’s Cube competition in the student center on Saturday. Patricia Li ’13 averaged the second fastest time ever by a female competitor in the 3x3 competition.

Dean Lerman reflects on decades of life, work at MIT

Heading Project Athena, OCW, and teaching students among his fondest memories

Lerman, from Page 1

function as “second-in-command” to the president of the university.

MIT President Susan J. Hockfield said in an MIT News Office article on Lerman’s departure, “With integrity, thoughtfulness, enthusiasm and unfailing good cheer, Steve Lerman has lived the life of MIT in every dimension... We are very sorry to lose this remarkable friend and

servant of MIT.”

In an interview with *The Tech* on Sunday, Lerman reflected on his long MIT career and discussed of his some most memorable experiences at the Institute.

The Tech: What are you most proud of having accomplished at MIT?

Steven Lerman: Well, maybe two or three different things. I think first

project Athena, which is high on my list. I was the first director of it when it was a research program from 1983 to 1998. It really created the first computing system for integrated campus. I think the second thing would be my involvement with OpenCourseWare... The early stages of it were run in my lab, though the idea didn’t come from my lab. I have been the chair of [OCW’s] Faculty Advisory Committee since

it existed.

TT: Any personal anecdotes or anything you’ll remember the most from your experience at MIT?

SL: The most of course is people — all the people that I worked with: faculty, staff, administrators, students... During the time since I moved on campus [as a housemaster], there were probably over 900 students in my dorm that I got to know to various degrees... And then I must know half the faculty, many of them over a lot of years. There is also a fantastic staff here that I will miss. So, I suspect the biggest memories are going to be about the people, not about an event or a thing.

ing the time to do that...

I think the Athena experience, because it was so unique in my career, was incredibly enjoyable. It was also exciting and enjoyable and at times a little daunting. But I was a very young faculty member at the time... I was about 31 when I had to do that, which for faculty is on the young side to be leading a major initiative.

TT: Now that you’re leaving, who do you envision will watch over these programs and keep them alive?

SL: Well, the OCW has a faculty advisory committee which I have chaired since it started and many people share the passion for the program who are on the committee. And I expect that one of them will be appointed chair as I leave... and that that group will continue to sustain and advocate for OpenCourseWare. The Athena system I think will similarly be supported; there’s something called the MIT Council of Education and Technology... which I have been part of since it started, though I don’t chair it, and I think they will continue to be the faculty and the students who are involved in this and will continue to support Athena. All these committees will I think continue to advocate for and provide advice to both the OCW and Athena staff. So I am confident that both these things are so deeply rooted into MIT’s culture that they’ll be sustained.

TT: What made you decide to become housemaster [of Warehouse]?



SL: [My wife and I] decided to do it when our third, our last child went off to college. And MIT was just about to open... the building that we’re in now, the Warehouse. We had talked about it and the whole idea of starting a whole new chapter in our lives. We were living in a suburban house, but that no longer made a great deal of sense, considering we didn’t have children in schools anymore. We were really excited about the idea of doing something different, to be really deeply engaged with our students. It was just an incredibly exciting opportunity. We loved it.

TT: Do you have any especially memorable times?

SL: We almost always celebrate Thanksgiving with the students that were here... but our favorite event started right when the dorm opened, called the pancake breakfast. So once a month, my wife and I cook breakfast for the dorm in our apartment. Anybody who wants to can come as they are — even pajamas if you want. Every month is a themed month. We would have cherry pancakes and chocolate chip pancakes for Valentine’s Day and Halloween... For December it was usually something like ginger bread pancakes... We must have had one for almost every month in the academic year for nine years.

TT: What was the incentive for going someplace new?

SL: It was a hard choice, to be honest. Leaving was a very difficult decision. It wasn’t that I felt pushed from MIT; it was more a pull. The application from George Washington University came about rather suddenly for me. I hadn’t even expected to be asked to apply. And then I made a trip down there and I was incredibly impressed and excited by the opportunity to move into a very different world there. To be honest, it is a very different university than MIT, and that’s part of what interested me. I think another component, frankly, is that I am now of an age where if I am going to move to a position of leadership like this one, now is the time; the door doesn’t stay open forever...



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Week 1: **THE PHANTOM MENACE**
March 9 - Revelation 12:7—13:1

Week 2: **ATTACK OF THE CLONES**
March 16 – Romans 6:15-23

Week 3: **REVENGE OF THE SITH**
March 30 – Ephesians 4:17-25

Week 4: **STAR WARS: A NEW HOPE**
April 6 – Acts 2:14-36

Week 5: **THE EMPIRE STRIKES BACK**
April 13 – Matthew 7:13-24

Week 6: **RETURN OF THE JEDI**
April 20 – It’s a Secret

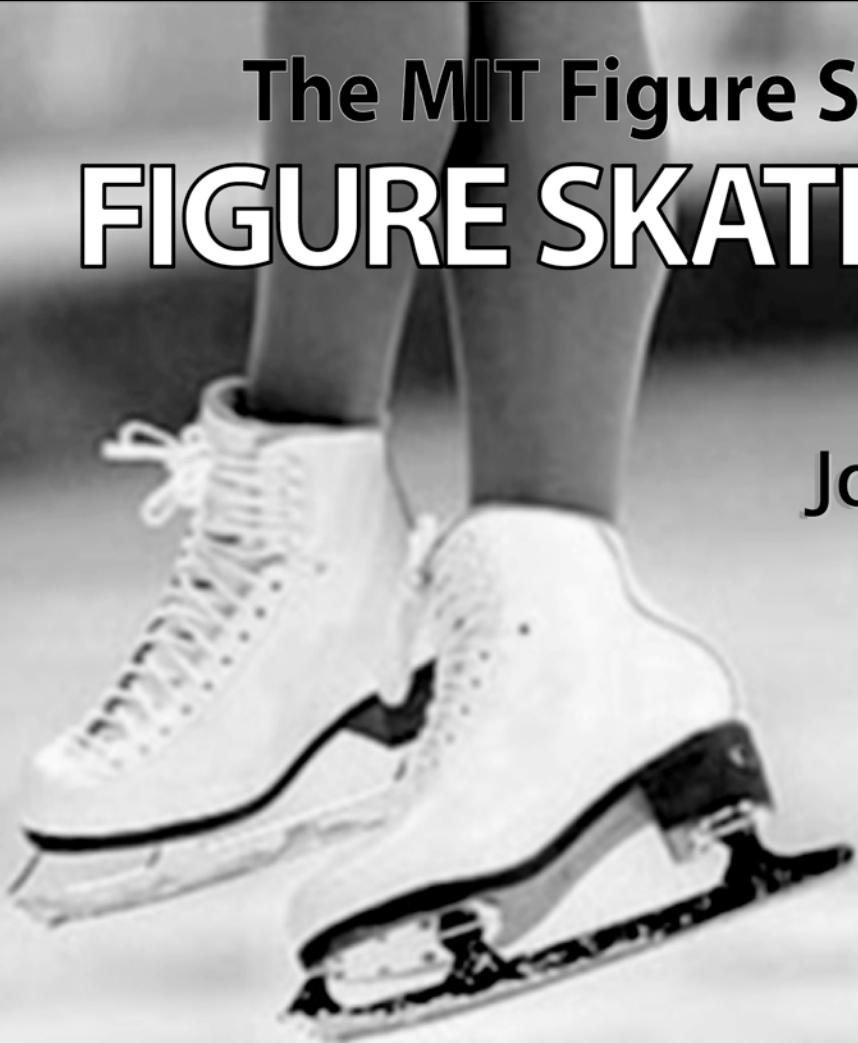
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March 19



Awards Convocation 2010




The MIT Figure Skating Club's Annual FIGURE SKATING EXHIBITION

Johnson Athletics Center
Friday, March 12
7pm
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****This event is hosted by the MIT Figure Skating club and is sanctioned by the United States Figure Skating Association****

<http://web.mit.edu/skatingclub/www/Home.html>





MIT Mentoring Fair

Monday, April 12, 2010
12:00 – 2:00 pm
Walker Memorial




Learn about Mentoring Programs at MIT for undergraduates, graduate students, staff and faculty.


Help us recognize great mentors at MIT.
Please nominate someone you think deserves recognition for taking the time to support you. Tell us about someone that has enhanced your growth, knowledge and skills and has been a valuable resource to you as a mentor.
Contact Tobie Weiner (iguanatw@mit.edu) and send a paragraph or two explaining why this person has been a mentor to you.



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