

UA leaders talk progress since election

*Communication is top
priority for fall they say*

By Stan Gill

UA President Vrajesh Y. Modi '11 and Vice President Samantha "Sammi" G. Wyman '11 ran together last spring with the slogan "We do things." Their vision to improve UA interaction with students, the freshman advising system, and overall student life won them the election by a landslide margin last spring. How are their plans faring this year?

Modi and Wyman say they are still making communication a priority. "We noticed [last spring] there was a need for greater communication between us and the students," Wyman said.

They plan to reach out to students through a more user-friendly website, a new UA newsletter and a blog. To make themselves more accessible, they will be holding UA executive meetings in dorms (meetings start this Wednesday).

In opening these new lines of communication between the UA and students, Modi and Wyman hope that students will feel encouraged to let the UA know what they want. The intent, they said, was to not have to make guesses when forming proposals that affect students. Modi says that the favorable numbers at the recent UA info sessions in the dorms indicate that students are engaged and want to tell the UA about their concerns.

Modi says the project with the biggest long-term potential is the proposed reform of the freshman advising system, which would add an option for a second, more career-oriented mentor in addition to a student's normal academic advisor. The goal is to combat the problem of academic advisors not necessarily having expertise in the career areas where freshmen may be looking for guidance.

The UA recently held a preliminary meeting with UAAP head Julie Norman to talk about this proposal,

UA interview, Page 10

Please come get your packages!



ELIJAH L. MENA—THE TECH

Ann Ouyang, A Next House desk worker, sorts through a deluge of package deliveries. Other dorms have also been inundated with packages recently. East Campus, for instance, reported receiving over 90 packages a day last week.

At MIT, mysteries of the tenure game

About half of professors don't make it. What does it take to get tenure?

By Jess Lin
STAFF REPORTER

A version of this story was originally published on June 11. To find out where Hudson is now, see the epilogue.

Eric Hudson is a known star in the classroom. His popularity as instructor of 8.02 was confirmed in 2008, when he received the Baker Award for teaching, which is given only to a couple professors every year and is based solely on student nominations.

Charles C. Mills '12, a former student of Hudson's, recalled being astonished by Hudson's dedication to teaching. "I got e-mails [responses to questions] from him last year at two in the morning, three in the morning, and I was like, 'What are you doing awake?'"

This spring, sixty-two students rated Hudson an average of 6.6 out of 7 in the

Spring 2010 course evaluations for 8.02, the second-highest among the term's eight instructors.

Perhaps his rating could have been higher, had he been in class more often. But Hudson spent a good chunk of this spring jet-setting. He was looking for a job, because he found out in December that he was not getting tenure.

INSIDE
A step-by-step guide to the tenure process

In those weeks away from MIT, he had been to England, Sweden, and the state of Georgia interviewing for a new post as professor, since he'd been informed he would have to leave his position in the

Department of Physics this July. (See epilogue.)

Plenty of professors don't get tenure. According to The Report on the Initiative for Faculty Race and Diversity, which was released this January, 53 percent of all assistant professors from 1991-2004 did not get tenure.

What distinguishes the tenured forty-seven percent? These days, when the value of tenure itself is being debated (for instance, an essay titled "The End of Tenure?" appeared in the New York Times less than two weeks ago), it's useful to learn about the process. How do you get tenure at MIT?

What does it take?

At MIT, the Baker Teaching Award is colloquially known as the "kiss of death"

Tenure, Page 14

IN SHORT

The new deadline for waiving the Extended Health Plan from MIT Medical is Wednesday, earlier than in past years. The plan is automatically billed to student accounts unless waived. Students wishing to enroll their families must also do so by the deadline. You can waive the plan or enroll your family at <http://medweb.mit.edu>.

The UROP direct funding deadline is this Thursday. Proposals are due by 5 p.m. The deadline for supervisor/sponsored research funding is still more than a month away, on October 28. For all the deadlines, visit <http://web.mit.edu/urop/basicinfo/deadlines.html>.

Applications for lockers in the Student Center are open until Friday, Sept. 17. A \$20 fee applies for use of the locker during the fall semester. Apply online at <http://studentlife.mit.edu/cac/locker-lottery>.

UA Senate and Class Council voting opens Wednesday at 9 a.m. Vote online at <http://vote.mit.edu/> until Thursday night at 11:59 p.m. Paper balloting will take place in Lobby 10 on Friday from 9 a.m. to 5 p.m.

Why is there a lobster in the toilet? Another bizarre e-mail of the week, p. 15.

Send news information and tips to news@tech.mit.edu.

Yes, more cameras

Two cameras are being installed on top of the roof of Bldg. 54. Yesterday, camera housings were installed, on each of the south corners. One is pointed at Maseeh Hall (W1), and one is pointed at Harvard Bridge. Thomas W. Komola from the Security and Emergency Management Office said the footage from the cameras would be used under the Security Office's standard policy: access to the footage is only available at written request of MIT Chief of Police John DiFava.

— John A. Hawkinson



JOHN A. HAWKINSON—THE TECH

A camera mount was installed on the south-west corner of the Green Building yesterday. It is pointed directly at Maseeh Hall (W1).

BROUHAHA RHYTHM

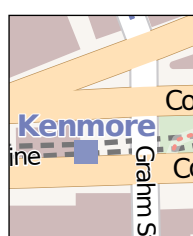
Developing a game is a lot like building a house. It's a complex problem, and every role is crucial. **CL, p. 9**

AS IRAN GOES NUCLEAR

There is a brief window for action, but the U.S. must be quick. **OPN, p. 5**

JUST MAKE TEXTBOOKS FREE

The only people who profit are the publishers anyway. **OPN, p. 5**



FENWAY-KENMORE

Fraternity houses and business that love college students — what's not to love about Fenway-Kenmore? **CL, p. 8**

WOMEN'S TENNIS ROCKS SMITH

Women's tennis wins 7-2 in their season opener against Smith College. **SPO, p. 16**

SECTIONS

World & Nation . . . 2
Opinion 4
Fun Pages 6
Campus Life 8
Sports 16

Cuba's public-sector layoffs signal major shift

MEXICO CITY — In perhaps the clearest sign yet that economic change is gathering pace in Cuba, the government plans to lay off more than half a million people from the public sector in the expectation that they will move into private businesses, Cuba's labor federation said Monday.

Over the past several months, President Raul Castro has given stern warnings that Cuba's economy needs a radical overhaul, beginning with its workers. With as many as 1 million excess employees on the state payroll, Castro has said, the government is supporting a bloated bureaucracy that has sapped motivation and long sheltered a huge swath of the nation's workers.

"We have to erase forever the notion that Cuba is the only country in the world where one can live without working," he told the National Assembly last month.

Since permanently taking over from his brother Fidel two years ago, Castro has often pledged to make Cuba's centralized, Soviet-style economy more efficient and open up opportunities for people. The government has handed tens of thousands of acres of state-held farm land to private farmers and begun freeing up a market for agricultural supplies. It has loosened restrictions on cell phones and other electronics and created a few areas for private business, allowing barbers' shops to become cooperatives and giving more licenses to private taxi drivers.

But these initial reforms have been comparatively limited, many analysts contend, and Cuba's economy -- grappling with the fallout from the global financial crisis and the aftermath of devastating hurricanes in 2008 -- appears to be in dire shape.

Tourism revenues have flagged, the country has faced rice shortages and its sugar crop has been disastrous. Last year, imports fell by 37 percent.

In its statement Monday, the Cuban Workers' Central, the country's only recognized labor federation, acknowledged the nation's troubled economy, saying that changes were "necessary and could not be delayed."

—Elizabeth Malkin, *The New York Times*

Floods change Pakistan's campaign against militants

KALAM, Pakistan — The destruction caused by the recent floods and the huge relief effort undertaken since by the Pakistani army have forced it to alter plans to combat Taliban and al-Qaida militants, Pakistani military officials here said.

Troops who have been fighting Islamist militants in the Swat Valley for the last two years will have to stay here for six months longer than planned, army officers here said. Elsewhere, some planned offensive actions have been converted to defensive actions to consolidate gains already made, Maj. Gen. Athar Abbas, spokesman for the military, said in a telephone call.

While the changes do not appear to involve any major re-trenchment in the nation's counterinsurgency strategy, they are the first sign of the strain the countrywide flooding has put on Pakistan's armed forces, which are overstretched in dealing with a virulent insurgency. The Pakistani military has already delayed operations against North Waziristan, the central hub of militancy, and al-Qaida, because it says its forces are over-extended.

The armed forces had to divert 72,000 men at the peak, including army and navy commandos of its Special Services Group, to do the heavy lifting of the flood rescue and relief effort, as well as provide security for U.S. helicopters that have joined the relief effort.

The Pakistani military insists that not many of the 147,000 troops deployed in the northwestern region have been diverted by the floods and that continuing operations against militants in the border region with Afghanistan have not been affected. Troops are continuing to conduct offensive operations in several places, like the Orakzai and Khyber regions, Abbas said.

—Carlotta Gall, *The New York Times*

A technology sets inventors free to dream

By Ashlee Vance
THE NEW YORK TIMES

SAN FRANCISCO — Businesses in the South Park district of San Francisco generally sell either Web technology or sandwiches and burritos. Bespoke Innovations plans to sell designer body parts.

The company is using advances in a technology known as 3-D printing to create prosthetic limb casings wrapped in embroidered leather, shimmering metal or whatever else someone might want.

Scott Summit, a co-founder of Bespoke, and his partner, an orthopedic surgeon, are set to open a studio this fall where they will sell the limb coverings and experiment with printing entire customized limbs that could cost a tenth of comparable artificial limbs made using traditional methods. And they will be dishwasher-safe, too.

A 3-D printer, which has nothing to do with paper printers, creates an object by stacking one layer of material — typically plastic or metal — on top of another, much the same way a pastry chef makes baklava

with sheets of phyllo dough.

The technology has been radically transformed from its origins as a tool used by manufacturers and designers to build prototypes.

These days it is giving rise to a string of never-before-possible businesses that are selling iPhone cases, lamps, doorknobs, jewelry, handbags, perfume bottles, clothing and architectural models. And while some wonder how successfully the technology will make the transition from manufacturing applications to producing consumer goods, its use is exploding. Advocates of the technology say that by doing away with manual labor, 3-D printing could revamp the economics of manufacturing and revive American industry as creativity and ingenuity replace labor costs as the main concern around a variety of goods.

A wealth of design software programs, from free applications to the more sophisticated offerings of companies including Alibre and Autodesk, allows a person to concoct a product at home, then send the design to a company like Shapeways, which will print it and mail it

back.

Depending on the type of job at hand, a typical 3-D printer can cost from \$10,000 to more than \$100,000.

Freedom of Creation, based in Amsterdam, designs and prints exotic furniture and other fixtures for hotels and restaurants. It also makes iPhone cases for Apple, eye cream bottles for L'Oreal and jewelry and handbags for sale on its website.

"The aim was always to bring this to consumers instead of keeping it a secret at NASA and big manufacturers," said Janne Kyttanen, 36, who founded Freedom of Creation about 10 years ago. "Everyone thought I was a lunatic when we started."

The 3-D printing wave has caught the attention of some of the world's biggest technology companies. Hewlett-Packard, the world's largest paper-printer maker, has started reselling 3-D printing machines made by Stratasys. And Google uses to the CADspan software from LGM to help people using its SketchUp design software turn their creations into 3-D printable objects.

Clinton says deal is possible on settlements in West Bank

By Mark Landler
and Isabel Kershner
THE NEW YORK TIMES

SHANNON, Ireland — Secretary of State Hillary Rodham Clinton said Monday that she believed that the Israelis and Palestinians could work out a deal on Jewish settlements, leaving open the possibility that their fledgling peace talks could go forward even without an extension of Israel's moratorium on settlement construction.

Speaking to reporters during her flight to Sharm el Sheik, the Egyptian resort where talks will resume Tuesday, Clinton also repeated President Barack Obama's call for Israel's prime minister, Benjamin Netanyahu, to extend the moratorium, scheduled to expire Sept. 26. The Palestinian president, Mahmoud Abbas, has threatened to quit the negotiations if the temporary ban is not extended.

On Sunday, Netanyahu offered a hint of flexibility, saying that while Israel would not extend the moratorium, it would not build the tens of thousands of housing units that are in the planning pipeline. Clinton suggested that gestures by the Palestinians, especially on security issues, could give Netanyahu the leverage he needed to sell a compromise to his domestic audience. She declined to offer proposals, saying it was up to the two sides to come up with compromises.

Palestinian leaders reacted coolly Monday to Netanyahu's overture, making it clear that no understanding had been reached. Nabil Shaath, a senior Palestinian negotiator, said that a plethora of statements from Netanyahu and others were "confusing" and that the Palestinians were waiting to see the Israeli prime minister in Sharm el Sheik.

Netanyahu faced growing pressure from the settlers' leaders. The

Yesha Council, the West Bank settlers' umbrella organization, said in a statement Monday that any continuation of the construction freeze, which began in November, would lead to "severe political instability within Israel and the ultimate collapse of the current government."

Clinton is scheduled to meet Tuesday with Netanyahu and Abbas for a round of negotiations hosted by the Egyptian president, Hosni Mubarak. The next day, the talks will move to Jerusalem, and Thursday Clinton will travel to Ramallah in the West Bank to meet again with Abbas, before driving to Jordan's capital, Amman, where she is scheduled to have lunch with King Abdullah II.

Hamas, the Islamist militant group that controls Gaza, virulently opposes the peace talks. Its military wing claimed responsibility for two shooting attacks on settlers' cars two weeks ago. Four Israeli civilians were killed in the first attack.

WEATHER

Igor, Julia churn in Atlantic

By Vince Agard
STAFF METEOROLOGIST

While relatively calm weather continues here in New England, a major hurricane is currently producing very strong winds in the Atlantic Ocean. Located about 700 miles (1,127 km) east of the Leeward Islands, Hurricane Igor was a Category 4 hurricane with maximum sustained winds of 150 mph (241 km/h) as of 5 p.m. yesterday. Igor is the ninth named tropical cyclone, the fourth hurricane, and the third major hurricane in the Atlantic basin this year, and while it is too soon to say whether it will directly impact the

United States, Igor could reach Bermuda by this weekend.

Meanwhile, Tropical Storm Julia has formed near the Cape Verde Islands off the coast of Africa, and is expected the same general track as Igor. The recent increase in tropical cyclone activity in the Atlantic is consistent with the September peak usually seen in the hurricane season, and the above-average number of cyclones expected by the National Hurricane Center this year.

Closer to home, an overnight frontal passage will bring an offshore breeze today, clearing skies and making for the most pleasant day of the week.

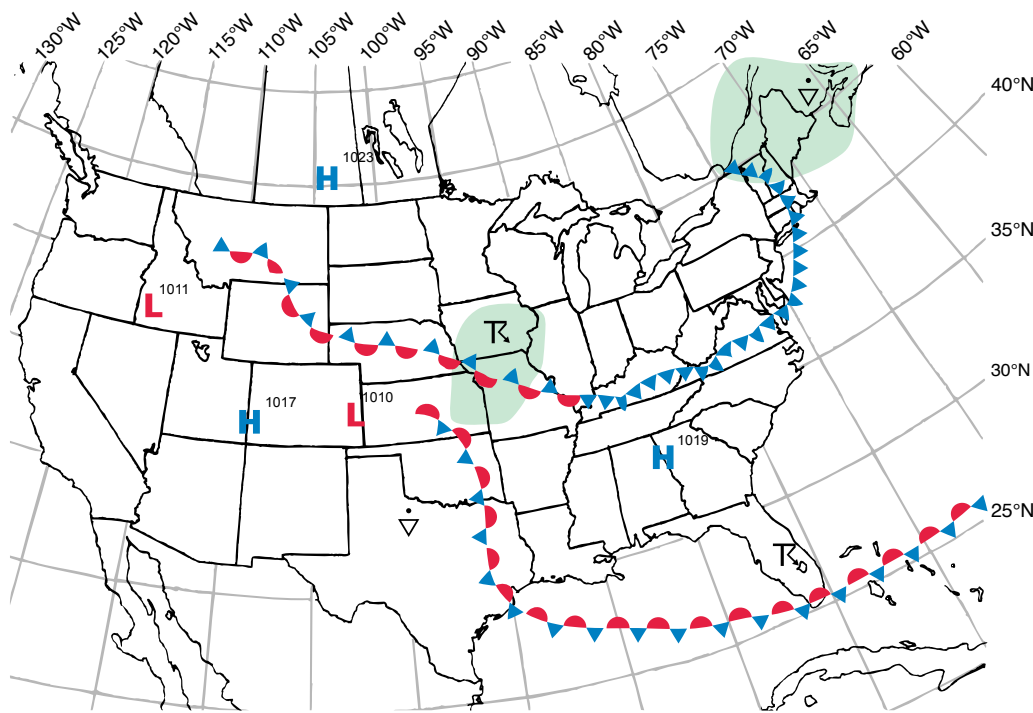
Extended Forecast

Today: Mostly sunny, Winds W at 10-15 mph. High 75°F (24°C).

Tonight: Mostly clear, Winds W at 8-12 mph.. Low 54°F (12°C).

Tomorrow: Breezy with a few clouds. High 70°F (21°C).

Thursday: Partly sunny. High 60's°F (20°C).



Situation for Noon Eastern Time, Tuesday, September 14, 2010

Weather Systems	Weather Fronts	Precipitation Symbols	Other Symbols
H High Pressure	--- Trough	Snow * Rain ∇	≡ Fog
L Low Pressure	— Warm Front	Light * Moderate ** Heavy ***	⊞ Thunderstorm
§ Hurricane	▲▲ Cold Front		○ Haze
	— Stationary Front		Compiled by MIT Meteorology Staff and The Tech

Turkish constitutional changes pass by a wide margin

By **Sebnem Arsu**
and **Dan Bilefsky**
THE NEW YORK TIMES

ISTANBUL — Turkish voters approved a sweeping package of constitutional reforms by a wide margin on Sunday, handing a major victory to the Islamist-rooted government that continued the country's inexorable shift in power away from the secular Westernized elite that has governed modern Turkey for most of its history.

The changes were intended to bring Turkey's military-imposed Constitution in line with European standards of law and democracy, but were widely viewed by voters and politicians here as a referendum on the government of Prime

Minister Recep Tayyip Erdogan.

According to unofficial results issued late Sunday night, the package of 26 constitutional amendments passed with 58 percent of the vote, the semiofficial Anatolian News Agency reported.

"The main message out of the ballot boxes is that our nation said yes to advanced democracy, yes to freedoms, yes to the superiority of law — not the law of the superiors — and yes to the sovereignty of national will," Erdogan said.

Analysts said the vote would bolster the government's prospects of winning re-election next spring, but was also likely to reinforce sharp ideological divisions in this deeply polarized country.

The governing Justice and Devel-

opment Party, which proposed the changes, portrayed the constitutional overhaul as an effort to strengthen Turkey's democracy while helping clear its path toward membership in the European Union. The amendments, the government says, represented a long-overdue attempt to revamp a Constitution ratified after a military coup whose 30th anniversary was on Sunday.

But opponents of the changes describe them as an orchestrated power grab aimed at undermining the secular order established by the republic's founder, Mustafa Kemal Ataturk, in 1923, and giving religious conservatives power over the military and judiciary, the last independent guardians of the secular state.

Gulf may have avoided direst predictions after spill

By **Leslie Kaufman**
and **Shaila Dewan**
THE NEW YORK TIMES

NEW ORLEANS — Marsh grasses matted by oil are still a common sight on the gulf coast here, but so are green shoots springing up beneath them.

In nearby bird colonies, carcasses are still being discovered, but they number in the thousands, not the tens of thousands that have died in other oil spills.

And at the mouth of the Mississippi River, the zone of severely

oxygen-depleted water that forms every summer has reappeared, but its size does not seem to have been affected by the Deepwater Horizon spill.

How much damage resulted from almost 5 million barrels of oil pouring into the Gulf of Mexico is still being toted up. It will be some time before the government releases its formal assessment of the effects — one that will define the scope of environmental restoration required by BP and other companies.

Separately, scientists are argu-

ing heatedly about how fast a large plume of dispersed oil more than a half-mile below the surface of the gulf is breaking down and how great a threat it poses to sea life.

Yet as the weeks pass, evidence is increasing that through a combination of luck (a fortunate shift in ocean currents that kept much of the oil away from shore) and ecological circumstance (the relatively warm waters that increased the breakdown rate of the oil), the gulf region appears to have escaped the direst predictions of the spring.

European Commission raises growth forecast

The European Commission significantly raised its growth forecast for the region on Monday because of strong output data during the second quarter, and said that the recovery was starting to broaden across sectors.

In the latest of its twice-yearly economic forecasts, the commission predicted a growth rate for 2010 of 1.7 percent in the 16-nation euro area, and 1.8 percent for the 27-member European Union. Those were upward revisions of around three-quarters of a percentage point compared with the last forecast in May.

It stressed that the recovery was uneven across countries. The higher forecast was based on new, more positive assessments of Britain, France, Germany, Italy, the Netherlands, Poland and Spain, which account for about 80 percent of the European Union's gross domestic product.

This unevenness reflects differences in production structures, the scale of adjustment challenges and rebalancing within the European Union and the countries that use the euro.

But it added that the recovery was broadening "across sectors and demand components." In particular, it noted a better contribution of private investment and consumption to growth in the second quarter of 2010, exceeding the combined contributions of inventories and net exports.

—Matthew Saltmarsh, *The New York Times*

Biotech company to patent fuel-secreting bacterium

A biotech company plans to announce Tuesday that it has won a patent on a genetically altered bacterium that converts sunlight and carbon dioxide into ingredients of diesel fuel, a step that could provide a new pathway for making ethanol or a diesel replacement that skips several cumbersome and expensive steps in existing methods.

The bacterium's product, which it secretes like sweat, is a class of hydrocarbon molecules called alkanes that are chemically indistinguishable from the ones made in oil refineries. The organism can grow in bodies of water unfit for drinking or on land that is useless for farming, according to the company, Joule Unlimited of Cambridge, Mass.

"We make very clean, sulfur-free hydrocarbons that drop directly into the existing infrastructure for the production of diesel fuel," said William J. Sims, the chief executive of Joule. The object, he said, was not to be an alternative for fossil fuels, but "to become a viable replacement."

Joule said it was the first company to patent an organism that secretes hydrocarbon fuel made continuously, directly from sunlight. Other companies are working on organisms that will make fuel if fed sugar from corn or cellulosic sources.

—Matthew L. Wald, *The New York Times*

McKinsey & Company

Join the most influential leadership network in the world

Connecting with leaders

MIT Consulting Panel

Wednesday, September 15
Whitaker Building 56 – Room 114
3:00 - 4:00 p.m.

Firm Presentation

Monday, September 20
Stata Center – 32-123
7:00 - 9:00 p.m.
Food Provided

Coffee Chats

Tuesday, September 21
Toscanini's 899 Main Street
10:00 a.m. - 2:00 p.m.

Athletes Event

Wednesday, September 22
Zesiger Center
2:00 - 5:00 p.m.

Career Fair

Thursday, September 23
Johnson Athletics Center – 2nd floor
11:00 a.m. - 5:00 p.m.

McKinsey Operations Event

Friday, September 24
MIT Campus – RSVP to
katelyn_ohara@mckinsey.com
2:00 - 4:00 p.m.



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LETTERS TO THE EDITOR

Net neutrality deserves protection

Suppose a small newspaper wants to make a bandwidth-intensive website. Without net neutrality, it's a no go, because the media conglomerate that owns the tubes wants to promote their own "news services." It would be like TV today. Want some news? Tune into CNN, FOX or MSNBC.

As someone who looks at user-submitted videos, peruses political blogs, reads Wikipedia and supports investigative journalism, I disagree with how Keith Yost compares a company's ability to section off the internet with a company's ability to make electricity pricier during peak demand. Eliminating net neutrality is more analogous to empowering an electricity company to choose which appliances you can cheaply use — this would obviously reduce the wealth of electrical devices available to the customer. The internet's diverse richness is best protected with net neutrality.

Yost claims net neutrality will lead to a slower internet. But currently in South Korea affordable 20Mbps broadband is ubiquitous, and Australia is planning to build infrastructure to cheaply provide citizens with a constant 100Mbps. 100Mbps is enough to stream 20 HD videos at the same time — plenty for the foreseeable future of the Web. Given that, I would rather have net neutrality, and preserve equal access to all types of content, than a marginally higher speed or lower cost for only services Comcast and NBC say are important to me.

Nils Molina '14

GUEST COLUMN

The facts about Rush

Tech columns were insulting to Greek life

By Qiaochu Yuan

I was very disappointed by the columns concerning Rush in the September 10 issue of *The Tech*. William Damazer's opinion article was particularly insulting. Freshmen at MIT do not show commitment to their fraternity through hazing. MIT has a strict no-hazing policy to which the fraternities adhere, and to suggest otherwise without evidence is irresponsible. I also find William's use of the phrase "cheap booze and women" unprofessional and unacceptable. One of the reasons rush is dry is so that alcohol is not a factor in a freshman's decision, and in any case it's not any harder to get alcohol on campus than it is at a fraternity. I am particularly appalled at the second half of the phrase, though. The women who spend time at my fraternity are our close friends; we respect and care about them a great deal. They are intelligent and self-empowered, and to suggest that they are here only to be some kind of sexual incentive for freshmen is deeply offensive to them, to the fraternity system, and to me personally. I think we are all owed an apology.

Where William's article was insulting, Ryan Normandin's has subtler problems. Steve Howland did a good job rebutting many of Ryan's misinformed claims, but

I would like to rebut a few more. Ryan dislikes the fact that it is easy to switch dorms, but difficult to switch fraternities. As fraternity members understand, it should not be easy to leave a fraternity. You have your dorm-mates for at most four years. You have your fraternity brothers for life. Pledging a fraternity is not a decision to make lightly, and the fact that it is "uncomfortable" to de-pledge reflects this. Analogously, it's "uncomfortable" to break up with a significant other, but that hasn't stopped many of my friends from dating.

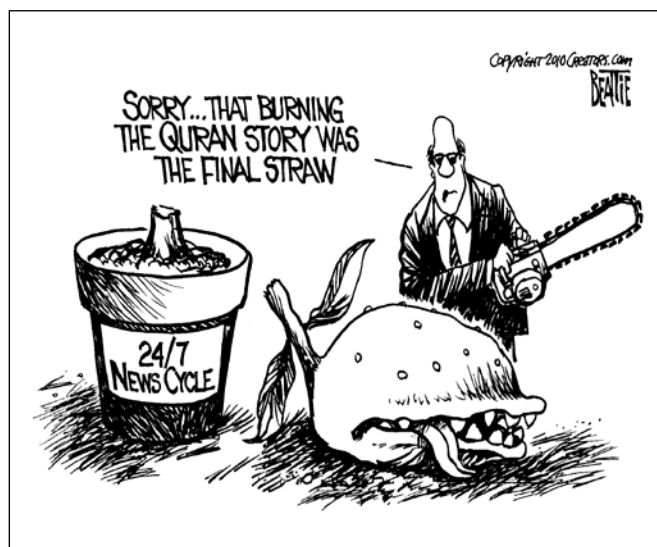
Ryan suggests that freshmen should wait a year before deciding whether or not to pledge. While this seems like a reasonable idea on the surface, any fraternity member who has seen a freshman promise to reconsider in a semester or a year knows that it almost never happens. There are two big reasons for this. First, MIT freshmen are very busy after Rush, so it would be both inconvenient and awkward to scout out fraternities during the school year. Without Rush to provide a social context in which a conversation about fraternity life can take place, very few freshmen would ever do what Ryan suggests. Second, MIT freshmen naturally become attached to their living groups. After a semester of a comfortable and enjoyable life in the dorms, even fewer freshmen would

ever consider leaving for a fraternity, not because fraternity life is less comfortable and enjoyable, but because they haven't had a semester to experience it.

If the freshman class decides to seriously follow Ryan's proposal, the inevitable result would be that hardly any freshmen enter the fraternity system. Ryan knows as well as any other MIT student that this benefits nobody — there are not enough places in the dorms for every student, so if MIT is to continue to promise housing for every student, it is essential that freshmen enter fraternities at the normal rate. So the proposal as it stands is untenable. While I might be willing to discuss the possibility that rush shouldn't take place at the beginning of freshman year, this is a different conversation to have at a different time.

Rush and the fraternity system are far from perfect, but they deserve much more credit than they have been given in this issue. Labeling an article "opinion" does not excuse a writer from providing evidence supporting those opinions. I hope that *The Tech* will hold its opinion articles to higher standards in the future and that its writers will all think twice before insulting an appreciable fraction of the MIT population that they don't know.

Qiaochu Yuan '12 is a member of Theta Xi.



CORRECTIONS

A New York Times wire article on Tuesday about the effectiveness of various study habits described incorrectly the Heisen-

berg uncertainty principle in physics. The principle holds that the act of measuring one property of a particle (position, for example) reduces the accuracy with which you can know another property (momentum, example for not that the act of measuring a property of the particle alters that property.)

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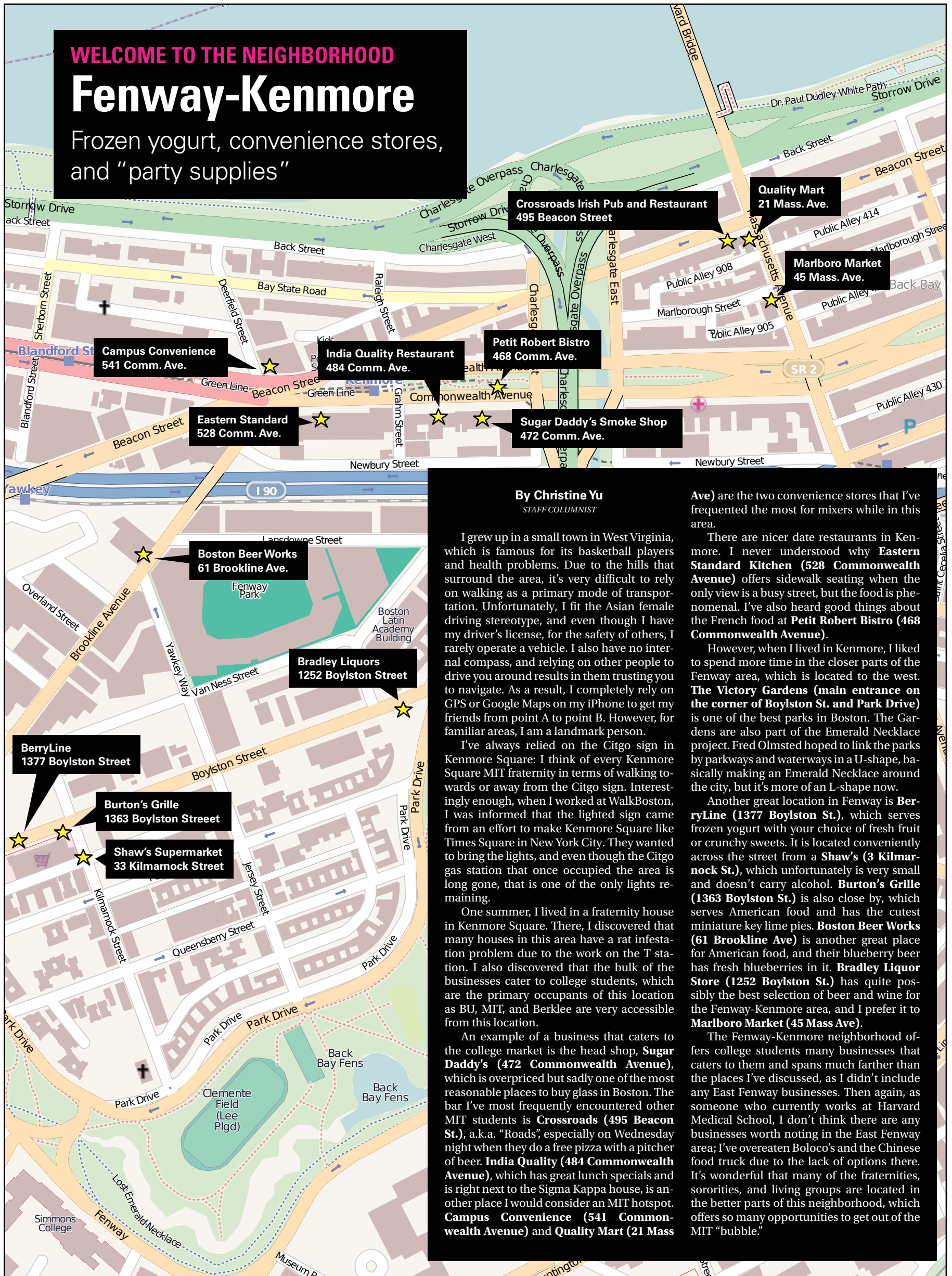
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WELCOME TO THE NEIGHBORHOOD

Fenway-Kenmore

Frozen yogurt, convenience stores, and "party supplies"

By Christine Yu
STAFF COLUMNIST

I grew up in a small town in West Virginia, which is famous for its basketball players and health problems. Due to the hills that surround the area, it's very difficult to rely on walking as a primary mode of transportation. Unfortunately, I fit the Asian female driving stereotype, and even though I have my driver's license, for the safety of others, I rarely operate a vehicle. I also have no internal compass, and relying on other people to drive you around results in them trusting you to navigate. As a result, I completely rely on GPS or Google Maps on my iPhone to get my friends from point A to point B. However, for familiar areas, I am a landmark person.

I've always relied on the Citgo sign in Kenmore Square: I think of every Kenmore Square MIT fraternity in terms of walking towards or away from the Citgo sign. Interestingly enough, when I worked at WalkBoston, I was informed that the lighted sign came from an effort to make Kenmore Square like Times Square in New York City. They wanted to bring the lights, and even though the Citgo gas station that once occupied the area is long gone, that is one of the only lights remaining.

One summer, I lived in a fraternity house in Kenmore Square. There, I discovered that many houses in this area have a rat infestation problem due to the work on the T station. I also discovered that the bulk of the businesses cater to college students, which are the primary occupants of this location as BU, MIT, and Berklee are very accessible from this location.

An example of a business that caters to the college market is the head shop, **Sugar Daddy's (472 Commonwealth Avenue)**, which is overpriced but sadly one of the most reasonable places to buy glass in Boston. The bar I've most frequently encountered other MIT students is **Crossroads (495 Beacon St.)**, a.k.a. "Roads", especially on Wednesday night when they do a free pizza with a pitcher of beer. **India Quality (484 Commonwealth Avenue)**, which has great lunch specials and is right next to the Sigma Kappa house, is another place I would consider an MIT hotspot. **Campus Convenience (541 Commonwealth Avenue)** and **Quality Mart (21 Mass**

Ave) are the two convenience stores that I've frequented the most for mixers while in this area.

There are nicer date restaurants in Kenmore. I never understood why **Eastern Standard Kitchen (528 Commonwealth Avenue)** offers sidewalk seating when the only view is a busy street, but the food is phenomenal. I've also heard good things about the French food at **Petit Robert Bistro (468 Commonwealth Avenue)**.

However, when I lived in Kenmore, I liked to spend more time in the closer parts of the Fenway area, which is located to the west. **The Victory Gardens (main entrance on the corner of Boylston St. and Park Drive)** is one of the best parks in Boston. The Gardens are also part of the Emerald Necklace project. Fred Olmsted hoped to link the parks by parkways and waterways in a U-shape, basically making an Emerald Necklace around the city, but it's more of an L-shape now.

Another great location in Fenway is **BerryLine (1377 Boylston St.)**, which serves frozen yogurt with your choice of fresh fruit or crunchy sweets. It is located conveniently across the street from a **Shaw's (3 Kilmamock St.)**, which unfortunately is very small and doesn't carry alcohol. **Burton's Grille (1363 Boylston St.)** is also close by, which serves American food and has the cutest miniature key lime pies. **Boston Beer Works (61 Brookline Ave)** is another great place for American food, and their blueberry beer has fresh blueberries in it. **Bradley Liquor Store (1252 Boylston St.)** has quite possibly the best selection of beer and wine for the Fenway-Kenmore area, and I prefer it to **Marlboro Market (45 Mass Ave)**.

The Fenway-Kenmore neighborhood offers college students many businesses that caters to them and spans much farther than the places I've discussed, as I didn't include any East Fenway businesses. Then again, as someone who currently works at Harvard Medical School, I don't think there are any businesses worth noting in the East Fenway area; I've overeaten Boloco's and the Chinese food truck due to the lack of options there. It's wonderful that many of the fraternities, sororities, and living groups are located in the better parts of this neighborhood, which offers so many opportunities to get out of the MIT "bubble."

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BROUHAHA RHYTHM

Playing games with metaphors

Video game is to house as developer is to...?

By Michael T. Lin
CAMPUS LIFE EDITOR

If you had told me five years ago that I would one day be interested in designing video games for a living, I would probably have freaked out that some crazy person claiming to be from MIT was trying to tell me information about my future, then laughed hysterically with skepticism. Back then, my interest in video games was almost exclusively as a player, and not an especially good one, at that. I barely even owned any video games growing up, and my awareness of the development process was limited to channel-surfing into X-Play occasionally and wondering to myself who those faceless people were that produced these parent-terrifying time sinks.

Now, a few classes and UROPs later, I find myself increasingly curious about designing games as a field, dipping my toes into one of the more recent entries in this season of "Michael's Next Top Career Choice." Are you happy now, Mysterious Time-Traveling Crazy Person? You were right.

The weird thing, though, is that most people I tell about my burgeoning interest in game design is that they seem to confuse it with game *development*. When I try to explain what game design is, it usually ends with calling it "the creative, artistic part of

making games — but not art-art, gameplay-art." "What, you mean like coding?" It has become abundantly clear that I need a more elaborate metaphor to convey my point.

It's hard to accurately describe how interconnected a game development team has to be in order to function properly. I don't mean interconnected like the Power Rangers' giant Zord mechas, where each Ranger has a distinct robot but they all smash bad guys in basically the same way. I would even hesitate to compare a game dev team to the crew in a caper movie, à la *Ocean's Eleven*. Even though every team member has their specialty, they operate simultaneously but mostly independently of one another. Coordination is important but rarely essential until you get to the last half-hour of the movie or so.

I think more than anything else, the development of a video game is most like building a house. Okay, it's not as cool a metaphor as being a Power Ranger or a master thief who looks like Frank Sinatra (or George Clooney), but then, few jobs are as glamorous as they sound on paper.

Most game development teams consist of producers, designers, quality assurance, artists, audio designers, and programmers. Producers are pretty much exactly what they sound like — they administrate the workings of the development team, tracks

progress, and makes sure everyone else has what they need to work effectively.

Designers are like the architects of the game. They draw up the blueprints, make sure that the house's layout makes sense so that the resident doesn't get trapped or lost (unless they're supposed to), and dictate to some extent the way the house works. Programmers (in the case of digital games), on the other hand, are the contractors building the house, because even if the architect hap-

I think more than anything else, the development of a video game is most like building a house.

pens to know what a hammer is and which end to hold, it usually takes a specialist with much more expertise (and elegance) to ensure the doors face the right way and that the oven goes in the kitchen, not the guest room. It's also the contractors' responsibility to keep the architect's demands in check, because no matter how cool it would be, an upside-down Jacuzzi the size of an Olympic swimming pool just isn't practical.

Artists and audio paint and decorate the house. While that may not sound like much, you have to consider that even if a house keeps weather out just as well without paint, flooring, and furniture, it really isn't livable without that extra polish. In games, it's even more crucial, as good art and audio direction open up all sorts of design space and control the flow of a lot of information.

Quality assurance developers are something of a challenge to pin down, metaphorically. They walk through prototypes of the house to make sure the walls aren't doing anything funky and observe focus testers as they do the same. Although quality assurance may be easy for some to dismiss as glorified testing, a good quality assurance developer is a producer and designer's best friend, delivering feedback from focus tests and making sure the game runs with the right specs and working features.

The end result, if all goes well, is a house that looks good, feels good, and makes the homeowner happy (or creeped out, or pumped up) when they walk through it. Sure, the electrical system might have a few quirks when it ships and it may not have the 50-person capacity movie theater the architect tried to sneak in, but at least it won't fall down or trap the person living in it halfway through the floor.

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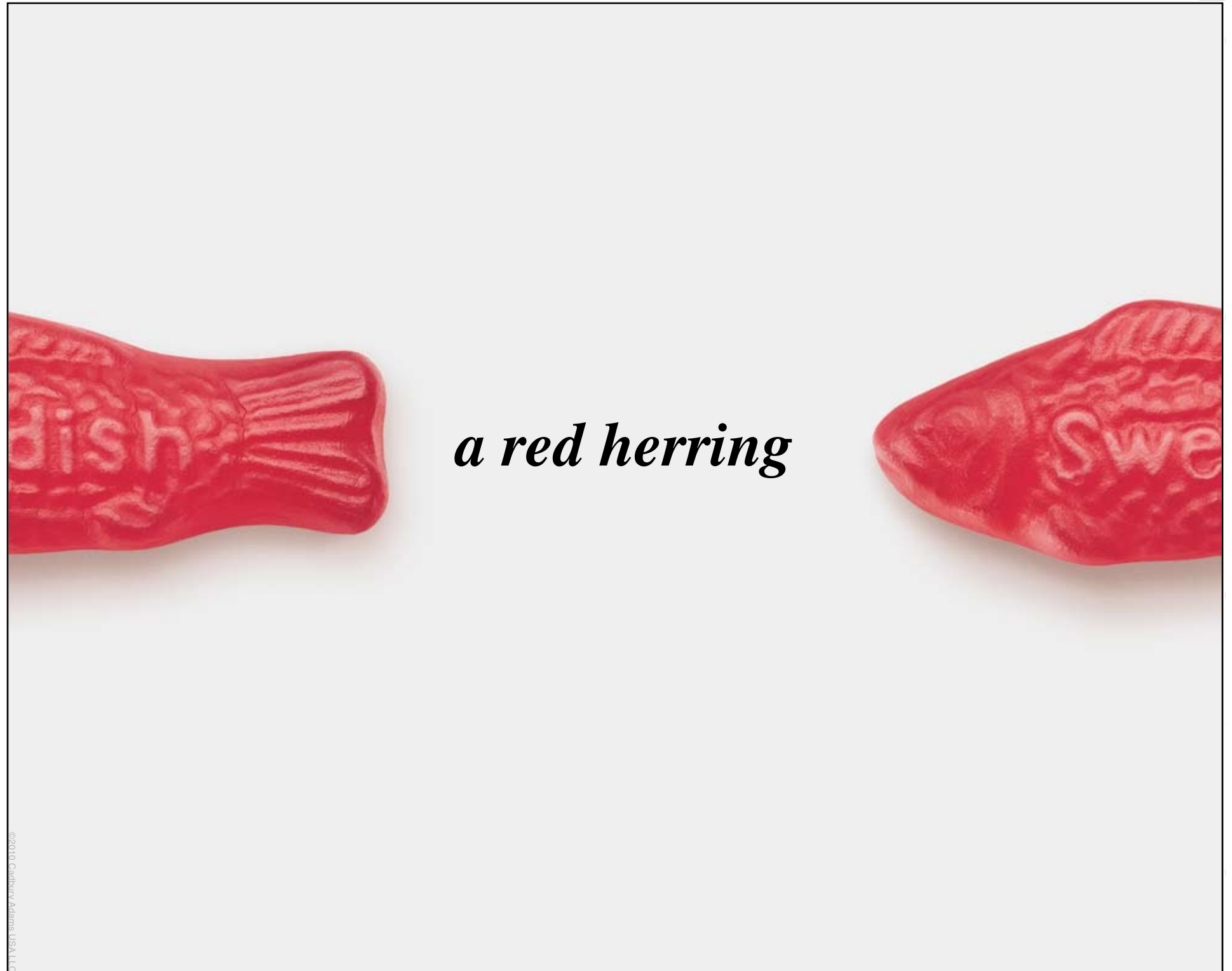
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Changes to advising could have big effects



GREG STEINBRECHER—TECH FILE PHOTO

UA interview, from Page 1

and they will meet soon with the Alumni Association to drum up support and mentors for the program. Although opting into having this second advisor would not be required, Modi and Wyman said they thought many would choose to take advantage of the opportunity.

Bringing the add/drop system fully online by the spring semester is another high-profile project that the UA has committed to. Wyman said that they have already applied for funding for the project and assembled a project team, and that they are on track to meeting their target date.

The SafeRide monitor that Modi and Wyman mentioned during their election campaign is now fully

operational and visible in the back of the Student Center. This year, the UA, along with the Baker Foundation, and the Dormitory Council, are co-sponsoring the shuttle to Trader Joe's and Whole Foods, which will begin running this Sunday. There are no changes planned to existing shuttles besides general improvements to the system.

As for the contentious issue of dining, Modi and Wyman said they plan to meet with dorm senators and get their thoughts on dining before committing to anything. The UA is also working on picking the winter location for the East Campus produce market. It will likely again be held in Stata, but might relocate inside the building now that the new Anish Kapoor mural has been installed in the market's previous winter location.

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Many confess to crime even when completely innocent

Researchers find that confessions of guilt just are not reliable, especially among mentally disabled

By John Schwartz
THE NEW YORK TIMES

KANSAS CITY, Mo. — Eddie Lowery lost 10 years of his life for a crime he did not commit. There was no physical evidence at his trial for rape, but one overwhelming factor put him away: He confessed.

At trial, the jury heard details that prosecutors insisted only the rapist could have known, including that the rapist hit the 75-year-old victim in the head with the handle of a silver table knife he found in the house. DNA evidence would later show that another man committed the crime. But that vindication would come only years after Lowery had served his sentence and was paroled in 1991.

"I beat myself up a lot" about having confessed, Lowery said in a recent interview. "I thought I was the only dummy who did that."

But more than 40 others have given confessions since 1976 that DNA evidence later showed were false, according to records compiled by Brandon L. Garrett, a professor at the University of Virginia School of Law. Experts have long known that some kinds of people — including the mentally impaired, the mentally ill, the young and the easily led — are the likeliest to be induced to confess. There are also people like Lowery, who says he was just pressed beyond endurance by interrogators.

New research shows how people who were apparently uninvolved in a crime could provide such a detailed account of what occurred, allowing prosecutors to claim that only the defendant could have committed the crime.

An article by Garrett draws on trial transcripts, recorded confessions and other background materials to show how incriminating facts got into those confessions — by police introducing important facts about the case, whether intentionally or unintentionally, during the interrogation.

To defense lawyers, the new research is eye opening.

"In the past, if somebody confessed, that was the end," said Peter J. Neufeld, a founder of the Innocence Project, an organization based in New York. "You couldn't imagine going forward."

The notion that such detailed confessions might be deemed voluntary because the defendants were not beaten or coerced suggests that courts should not simply look at whether confessions are voluntary, Neufeld said.

"They should look at whether they are reliable," he said.

Garrett said he was surprised by the complexity of the confessions he studied.

"I expected, and think people intuitively think, that a false confession would look flimsy," like someone saying simply, "I did it," he said.

Instead, he said, "almost all of these confessions looked uncannily reliable," rich in telling detail that almost inevitably had to come from the police. "I had known that in a couple of these cases, contamination could have occurred," he said, using a term in police circles for introducing facts into the interrogation process. "I didn't expect to see that almost all of them had been contaminated."

Of the exonerated defendants in the Garrett study, 26 — more than half — were "mentally disabled," under 18 at the time or both. Most were subjected to lengthy, high-pressure interrogations, and none had a lawyer present. Thirteen were taken to the crime scene.

Lowery's case shows how contamination occurs. He had come under suspicion, he now believes, because he had been partying and ran his car into a parked car the night of the rape, generating a police report. Officers grilled him for more than seven hours, insisting from the start that he had committed the crime.

Lowery took a lie detector test to prove he was innocent, but the officers told him that he had failed it.

"I didn't know any way out of that, except to tell them what they wanted to hear," he recalled. "And then get a

lawyer to prove my innocence."

Proving innocence after a confession, however, is rare. Eight of the defendants in Garrett's study had actually been cleared by DNA evidence before trial, but the courts convicted them anyway.

In one such case involving Jeffrey Deskovic, who spent 16 years in prison for a murder in Poughkeepsie, N.Y., prosecutors argued that the victim may have been sexually active and so the DNA evidence may have come from another liaison she had. The prosecutors asked the jury to focus on Deskovic's highly detailed confession and convict him.

While Garrett suggests that leaking facts during interrogations is sometimes unintentional, Lowery said that the contamination of his questioning was clearly intentional.

After his initial confession, he said, the interrogators went over the crime with him in detail — asking how he did it, but correcting him when he got the facts wrong. How did he get in? "I said, 'I kicked in the front door.'" But the rapist had used the back door, so he admitted to having gone around to the back. "They fed me the answers," he recalled.

Some defendants' confessions even include mistakes fed by the police. Earl Washington Jr., a mentally impaired man who spent 18 years in prison and came within hours of being executed for a murder he did not commit, stated in his confession that the victim had worn a halter top. In fact, she had worn a sundress, but an initial police report had stated that she wore a halter top.

Steven A. Drizin, the director of the Center on Wrongful Convictions at the Northwestern University School of Law, said the significance of contamination could not be understated. While errors might lead to wrongful arrest, "it's contamination that is the primary factor in wrongful convictions," he said. "Juries demand details from the suspect that make the confession appear to be reliable — that's where these cases go south."

Jim Trainum, a former policeman

who now advises police departments on training officers to avoid false confessions, explained that few of them intend to contaminate an interrogation or convict the innocent.

"You become so fixated on 'This is the right person, this is the guilty person' that you tend to ignore everything else," he said. The problem with false confessions, he said, is "the wrong person is still out there, and he's able to reoffend."

Trainum has become an advocate of videotaping entire interrogations. Requirements for recording confessions vary widely. Ten states require videotaping of at least some interrogations, like those in crimes that carry the death penalty, and seven state supreme courts have required or strongly encouraged recording.

These days Lowery, 51, lives in suburban Kansas City, in a house he is renovating with some of the \$7.5 million in settlement money he received, along with apologies, from officials in Riley County, Kan., where he was arrested and interrogated.

He has trouble putting the past behind him.

"I was embarrassed," he said. "You run in to so many people who say, 'I would never confess to a crime.'"

He does not argue with them, because he knows they did not experience what he went through.

"You've never been in a situation so intense, and you're naive about your rights," he said. "You don't know what you'll say to get out of that situation."

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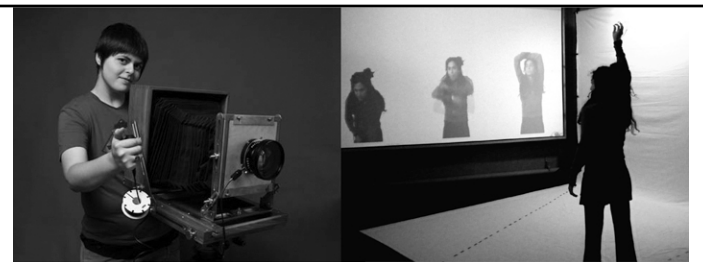


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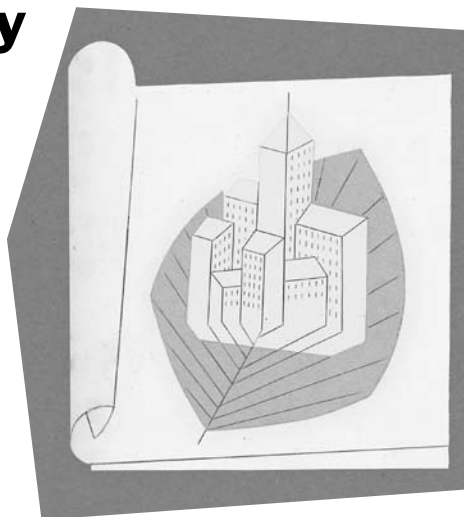
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Chroniclers of the atomic bomb

By William J. Broad
THE NEW YORK TIMES

They risked their lives to capture on film hundreds of blinding flashes, rising fireballs and mushroom clouds.

The blast from one detonation hurled a man and his camera into a ditch. When he got up, a second wave knocked him down again.

Then there was radiation.

While many of the scientists who made atom bombs during the Cold War became famous, the men who filmed what happened when those bombs were detonated made up a secret corps.

Their existence and the nature of their work has emerged from the shadows only since the federal government began a concerted effort to declassify their films about a dozen years ago. In all, the moviemakers fashioned 6,500 secret films, according to federal officials.

Today, the result is a surge in fiery images on television and movie screens, as well as growing public knowledge about the filmmakers.

The images are getting "seared into people's imaginations," said Robert S. Norris, author of "Racing for the Bomb." They bear witness, he added, "to extraordinary and terrifying power."

Two new documentaries, "Countdown to Zero" and "Nuclear Tipping Point," feature archival images of the blasts. Both argue that the threat of atomic terrorism is on the rise and call for the strengthening of nuclear safeguards and, ultimately, the elimination of global arsenals.

As for the cameramen, there aren't that many left. "Quite a few have died from cancer," George

Yoshitake, 82, one of the survivors, said of his peers in an interview. "No doubt it was related to the testing."

The cinematographers focused on nuclear test explosions in the Pacific and Nevada.

Electrified wire ringed their headquarters in the Hollywood Hills. The inconspicuous building, on Wonderland Avenue in Laurel Canyon, had a sound stage, screening rooms, processing labs, animation gear, film vaults and a staff of more than 250 producers, directors and cameramen — all with top-secret clearances.

When originally made, the films served as vital sources of information for scientists investigating the nature of nuclear arms and their destructiveness. Some movies also served as tutorials for federal and congressional leaders.

Today, arms controllers see the old films as studies in gung-ho paranoia.

"They have this very odd voice," said Mark Sugg, a film producer at the World Security Institute, a private group in Washington. "You and I would be appalled that some hydrogen bomb vaporized a corner of what used to be paradise. But they've got a guy bragging about it."

A 2006 book, "How to Photograph an Atomic Bomb," explores the nature of the cameramen's secretive enterprise, its pages full of declassified photographs and technical diagrams.

"They're kind of unrecognized patriots," said Peter Kuran, the book's author and a special-effects filmmaker in Hollywood. "The images that they captured will, for a long time, be a snapshot of what our

Bomb films, Page 13

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Wednesday, September 22

MIT-Germany

Wednesday, October 13

MIT-Mexico

Tuesday, October 12

MIT-India

Thursday, October 21

MIT-Spain

Tuesday, October 19

Nuclear films available on YouTube

Bomb films, from Page 12

last century was like."

After inaugurating the nuclear age and dropping two atomic bombs on Japan in World War II, the United States threw itself into expanding its nuclear arsenal. New designs required test detonations to make sure they worked properly. Between 1946 and 1962, the nation set off more than 200 atmospheric blasts.

The secret film unit, established in 1947 by the military, was known as the Lookout Mountain Laboratory. The lab, just minutes from the Sunset Strip, drew on Hollywood talent and technology to pursue its clandestine ends.

"The neighbors were suspicious because the lights were on all night long," Yoshitake recalled.

Film historians say the unit tested many technologies that Hollywood later embraced, including advanced lenses and cameras, films and projection techniques.

The cameramen fanned out to governmental test sites in the South Pacific and the Nevada desert, their job to chronicle the age's fury. It put them as close as two miles from the blasts.

The visual records helped scientists do everything from estimating the size of nuclear detonations to measuring their destructive power. Mock towns went up in flames.

Yoshitake recalled documenting what a fiery explosion did to pigs — whose skin resembles that of humans.

"Some were still squealing," he said. "You could smell the meat burning. It made you sick. I thought, 'Oh, how terrible. If they were humans they would have suffered terribly.'"

The cameramen were allowed to simply witness, not photograph, their first hydrogen bomb explosions, which were roughly one thousand times more powerful than atomic blasts. The goal was to get them accustomed to the level of violence.

"The purple glow in the sky — that was so eerie," Yoshitake recalled. "And we were not even close, about 20 miles away. It filled the whole sky."

The guarded enterprise lost its subject matter in 1963 when the superpowers agreed to move all testing of nuclear weapons underground, ending the spectacle of atmospheric blasts and what governments had come to regard as serious risks to human health from radioactive fallout.

In 1997, Hazel R. O'Leary, the secretary of energy under President Bill Clinton, sought to declassify the old movies.

At a news conference, O'Leary called the archive "a treasure trove" and promised to release the films after they had undergone any needed redactions for purposes of national security. Nuclear specialists say the shape and size of a weapon — especially a hydrogen bomb — can reveal design secrets.

The department's goal was to make public as many as 20 films a month and complete the declassification project in five to seven years.

Late in 1997, an event in Hollywood at the American Film Institute honored the filmmakers. Present were some two dozen of the survivors.

"You had to have the cameras running before the detonation," Douglas Wood, 75, a cinematographer, told a reporter at the gathering. If not, he said, the blinding flash "would burn the film and jam the film gate."

Kuran, the filmmaker, organized and filmed the Hollywood event. Impressed with the skill and courage of the cinematographers, he mixed the event footage with declassified bomb imagery to produce "Atomic Filmmakers," a video he sells on his website, www.atomcentral.com.

The declassifications stopped in 2001. The arrival of the Bush administration, and an outbreak

of atomic jitters after the terrorist attacks on New York City and the Pentagon, combined to bring about the program's demise.

Today, the Energy Department says it has released publicly some 100 movies from the vast stockpile, which the military controls. "What you see is what we have," said Darwin Morgan, a department spokesman in Las Vegas.

A page on the department's website features links to clips from the films that visitors can view free of charge and sells full versions for \$10, plus shipping. It calls them "an enduring, awesome visual documentation of the power and destruction of nuclear weapons." Many are available free on YouTube under the search heading "declassified U.S. nuclear test film."

Yoshitake, the cameraman, said the release and restoration of the images were healthy developments because their disclosure improved public understanding of the nuclear threat.

"It's a good thing to show the horror," he said.

And he wondered — now that the Cold War is over — why advanced nations still retain more than 20,000 of the deadliest of all weapons.

"Do we need all these bombs?" Yoshitake asked. "It's scary."

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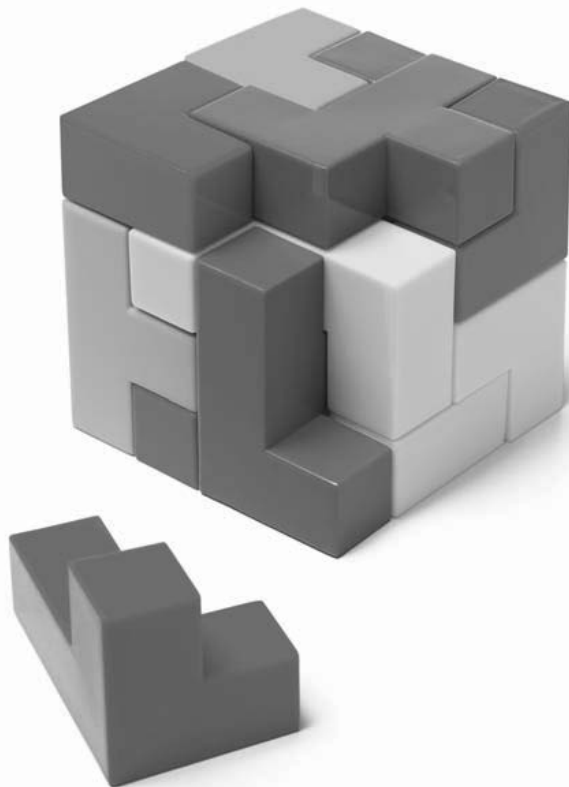
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Solution to Crossword

from page 7

A	L	M	S	S	O	Y	A	S	M	A	S	H	
L	E	A	P	C	P	A	S	T	A	M	P	A	
F	I	J	I	H	A	W	K	A	X	I	A	L	
O	R	V	I	L	L	E	W	R	I	G	H	T	
C	D	R	O	M	S	W	O	W	O	N	S		
L	I	D	I	M	I	T	V	A	R				
I	N	O	N	S	T	A	G	E	R	I	G	H	T
N	A	M	E	S	E	X	O	S	P	O	O	N	
G	H	O	S	T	W	R	I	T	E	A	L	T	O
T	A	I	S	H	A	Q	D	E	T				
U	N	C	N	F	C	R	U	F	F	L	E		
R	E	L	I	G	I	O	U	S	R	I	T	E	
I	R	E	N	E	M	C	C	I	O	V	A	L	
A	V	A	S	T	F	L	A	N	R	E	B	A	
H	E	R	T	Z	Y	A	N	G	D	R	E	W	

Solution to Sudoku

from page 7

1	2	5	4	6	8	3	7	9
6	9	4	7	3	2	8	5	1
3	8	7	9	1	5	6	4	2
2	5	1	6	7	9	4	8	3
4	3	6	8	2	1	7	9	5
8	7	9	5	4	3	2	1	6
9	1	3	2	8	7	5	6	4
7	4	2	1	5	6	9	3	8
5	6	8	3	9	4	1	2	7

Tenured professors cultivated from ground up

Tenure, from Page 1

— it's thought that professors who spend too much time in the classroom perhaps aren't spending enough time in the lab.

That's a myth, says former MIT president and professor emeritus Paul E. Gray. Professor Hazel L. Sive, associate dean of science, agrees. "Competent teaching is required for promotion," says Sive.

But the emphasis is still on research. It's assumed that teaching is something professors can slowly get better at. "Extreme excellence [in research] can compensate somewhat for less excellent teaching skills," Sive says.

Sive sums up MIT's tenure criteria in two words: excellence and visibility. Part of excellence, she says, "is that you are either the top investigator in your field, or one of the very tiny handful of top investigators in your field, in the world." Professor Patrick H. Winston offers a slightly different angle. It's crucial "that a person will improve the reputation of the institution," he says.

So, the tenure process places heavy emphasis on outside recommendation letters written by international experts in the candidate's field, since positive letters indicate that a candidate will boost MIT's standing. Letters from within the Institute, on the other hand, are assumed to be somewhat biased

by personal contact with the candidate, and while still considered, are "not an indication of outside reputation."

How do professors, especially young ones, earn that elusive international reputation? Winston acknowledges that tenure decisions are based on "short-term reputations" and recommends junior professors tackle "the sorts of things that can end up producing results in a small number of years," rather than large problems that require "ten years" before a paper can be produced. "Tenure is never about promise," he stated. "It's about accomplishment."

Because worldwide reputation is hard to gauge, professors' peers at MIT may not always be able to provide the most accurate feedback. "It's a little tricky because the [recommendation] letters are coming from outside people, partially from people who are in your specific field, and there's no one else here who does exactly what I do," explained Hudson. "I think that often you don't really have a good feeling [about your tenure case], or your feelings can be mistaken."

Hudson says there's no formula for fame. "Part of it is, you write great papers that everyone reads and then references and so you get famous, you go to conferences and give great talks," said Hudson. "But I think it's more than that. Some-

how you have to sway the community to think that what you're doing is important — and [...] there's not a prescription for that."

The MIT way

Each college approaches tenure with a distinct style. For MIT, that style is a tradition of growing its talent from the ground up.

That means MIT only hires professors that it believes can be successful, according to both Sive and Professor Thomas A. Kochan, the current Chair of the Faculty. "We are not in a mode like some universities historically have been, where you hire x number of people but you only expect x-minus-some to be successful at tenure," said Kochan. This attitude is reflected by a policy of "no required attrition," says Sive. When an Assistant Professor is hired at MIT, there is a corresponding, unique tenure position waiting for that person. A math nerd might say that there is a bijection between Assistant Professors and tenure positions.

Furthermore, MIT likes to hire people who are unestablished but promising, rather than poach superstars from other universities, says Kochan. (Though it does court superstars, relatively rarely, he adds.) "Then we do everything we can to help those individuals be successful. Not everyone makes it, that's the reality. But we are committed to hiring people that we believe have the capability to be successful and then working as hard as we can, and that's the way we want to grow our faculty."

MIT's tenure style stands out from that of its neighbor down the street. "Harvard has a reputation of tenuring almost nobody" said Winston. Gray added that Harvard, in contrast to MIT, will often dip into the already-tenured staff at other colleges. So Harvard gets great people, he says, but it doesn't contribute to their career development. "It seems to me that if you bring in bright young people, treat 'em well, be critical in your tenure review, you're contributing to the larger dimension of education than just your institution," he says. "And the thing that is problematic about it, is that when Harvard goes outside to hire a world-class person of high level, in many cases the first place they look is right here."

For example, two years ago, Harvard had offers out to three senior MIT faculty in economics, a rather significant number in that small department. Gray thought that was "indecent." "I can tell you we won all three," he said, smiling. "They stayed."

"Tremendous goodwill" toward junior faculty

Part of the reason for MIT's warmth toward tenure candidates is that it is in departments' interests for them to succeed. For one, the recruitment process requires time and resources, and it's often costly to support new junior faculty. They require lab space, some need a couple million dollars for lab equipment and help with funding before securing outside grants, and there may also be relocation costs for the faculty and their families. "It's expensive to hire a junior faculty member, amongst anything else, so we want to make sure that the investment in the junior faculty member is repaid, and the repayment is that they stay on as a senior faculty member," says Sive.

But the departments' friendliness toward new untenured faculty extend beyond financial reasons. "I tell the junior faculty that they are really the most important faculty at MIT because in twenty years' time they're going to be running the Institute... So there is tremendous, tremendous goodwill on the part of the senior faculty to help the junior faculty succeed," says Sive.

Hudson felt the wholehearted support of the Physics Department.

"The department is really amazingly friendly," he says. "For some reason I think there's this perception from the outside that because it's hard to get tenure here that it's somehow mean, and it is not at all like that."

The generosity of his senior colleagues went beyond any of his expectations. When Hudson first arrived at MIT, he was assigned lab space in Building 24 (where his lab is now), but because of construction, there was no room for him to work for the time being. So, a couple of professors offered up their own facilities to him. "That would never happen anywhere else," exclaimed Hudson brightly. "They gave up their lab to me for like six months! That was like, 'Welcome to MIT!'"

Imperfect, but still "a good thing"

Tenure is not infallible. "It's a process that works pretty well," said Winston. "But it's a process that can make mistakes both ways." Some deserving individuals are not tenured, and sometimes tenured individuals "aren't suited to helping the long-term reputation of the institution, or their problem is not of long-term interest."

Tenure decisions are also susceptible to the bias of contemporary academic interest. Winston recalls that for a period of time, "string theorist couldn't get jobs" in physics departments. In a later era, "you couldn't get a job unless you were a string theorist."

Deserving or not, tenured professors become diamonds with fine print. Their positions are secure for the rest of their lifetimes — barring "adequate cause." But that cause has to be "pretty egregious," according to Gray. Asked just what a professor would have to do to get his tenure revoked, Gray paused a moment to think. "Cheating on your research. Cookin' the books. Producing data you didn't really take." And even that might not be egregious enough.

Gray tried years ago, as Chancellor in the 1970's, to relieve a tenured professor who had been accused of passing off work of other faculty in his department as his own, and lying on his resume, claiming to have a doctorate he did not have. A committee of disinterested faculty reviewed the case and agreed with the charges, but they didn't think it warranted taking away tenure. That was the only attempt in his nine years as Chancellor and ten years as President. Part of the reason for the low number, he says, is that "the tenure process is thorough, and usually the people who get through are great people."

Despite the rare deviants, tenure serves an important purpose. It was established in the early twentieth century to protect professors from being fired for having views that college administrators disagreed with. Tenure "guaranteed you freedom of speech," said Gray.

Gray also sees value in evaluating professors early on in their careers, both for the universities and professors. It prevents universities from "making big mistakes that [they'll] regret later on" and does so while professors are young enough to seek employment elsewhere. "You know, you're not supposed to discriminate against people on the basis of age, but you don't find very many 55-year-olds who think it works that way," he said.

Hudson also agrees that tenure is a valuable institution, and although he disagrees with his tenure decision, accepts it as one that was arrived at honestly. "I think the tenure process is a good thing," he said. "The reason MIT is a fantastic place is because they've gotten rid of all the people who aren't fantastic, right?" he said lightheartedly with a laugh.

But he also wishes there could be a slight modification to the cur-

rent tenure criteria. "The problem is that there are always exceptions to the rule," he said. "An administrator in the physics department, her comment was, 'It would really be nice if once every ten years MIT would say, 'Expletive the letters, we know this guy is just good to have around and we're going to keep him.' And I think it would be nice if departments had that flexibility. And probably that's the right time scale too. Because if you start doing that... the problem is, we really like everybody, and so we'd never fire anyone and then we wouldn't be number one anymore."

"So it's good to say... you're great, but you're not MIT material," he says. "But it would be nice if there were occasionally another option."

Looking forward

So the tenure process sounds great in theory. But how well is the process actually being carried out?

The Report of the Special Faculty Committee on Promotion and Tenure Processes seeks to answer that question. It is expected to be released in the fall, according to Kochan, who co-chairs this Special Faculty Committee. According to him, the report investigates the management and transparency of the tenure process at MIT, and highlights the need for improvement across several fronts, including appeals, diversity, and mentoring.

Kochan expressed the need for a clearer tenure appeals process. Currently, it's one paragraph in a larger section on grievance procedures in the official MIT Policies and Procedures, and begins, "if the complaint is not successfully resolved within the academic lines of supervision in the relevant department and School, the aggrieved faculty member may write to the Provost requesting further review of the process that led to the decision." The report will recommend breaking the appeals process into its own section and expanding it to be clearer and more detailed.

Knowledge of the appeals process seems varied. Hudson was not aware of an appeals process. Winston and Gray admitted some uncertainty but recommended a letter to the provost. Sive said that there are many points of entry to file an appeal — through the head of the department, the Dean, or the Provost — and "there is a process by which appeals are organized by the Provost, but such appeals are very rare."

Second, the Race and Diversity report argues for a more diverse faculty at MIT, and this new report echoes that conclusion. "It's imperative for MIT to increase the number of underrepresented minorities on the faculty and to help them be successful," says Kochan. "I see that as one of the key goals of my time as Faculty Chair." So in recruitment for tenured positions, he says, MIT needs to be more proactive in broadening the scope of their search.

There's also a need to handle an increasing diversity in research interests, as more professors engage in interdisciplinary work. That creates a problem when it comes time to find outside recommendations for a tenure candidate. "It's difficult to identify who are the right experts," says Kochan. "We still need to go to the best experts in the fields that the person is working in, but the knowledge of who those people are and the right mix may require a bit more work."

Finally, the mentoring that junior professors receive is "highly variable" among and within different departments. For instance, some departments have an entire committee that advises junior faculty, whereas others have individuals as mentors. The report identi-

The road to getting tenure at MIT

Students are probably most familiar with the college admissions process. But a tenure review at MIT is quite different. It's much more drawn-out and thorough, though it has some of the same elements: an application, recommendation letters, and a hierarchy of reviewers.

Here's the nitty-gritty: New professors are first hired as assistant professors. After about five years, they are reviewed and must be promoted to associate professor without tenure (AWOT) in order to stay on. About 75 percent of candidates make it past that hurdle, according to the Race and Diversity report that came out this February. Then, two years later, AWOT professors "go up for tenure." If successful, they are promoted to associate professor with tenure; otherwise, their positions are terminated on a specified date, a date which professors are formally informed of a year before it occurs. Typically, the tenure decision is also delivered a year before this date, and thus professors who do not get tenure have a year to find another job. (Hudson received his decision only six months before he would have to leave due to complications from a lengthy lab construction when he first arrived at MIT.)

A candidate's application passes through a hierarchy of review committees, which must each give a thumbs-up. It begins within the candidate's department, where a small committee of tenured professors gathers information about the candidate.

"You end up with a dossier which is a quarter to three eighths of an inch thick," says Professor Emeritus and former MIT President Paul E. Gray, holding up two fingers to show the thickness. The dossier includes a full biography, a list of all the candidate's publications, and a collection of recommendation letters.

That group of over twenty recommendation letters is critically important, for reasons

explained later. At least in the Department of Electrical Engineering and Computer Science, roughly twice as many are written by experts from outside MIT who are in the candidate's field than by professors within MIT, according to Professor Patrick H. Winston, who has helped administer tenure reviews in the department.

So how are the recommenders chosen? According to Winston, the candidate and his or her mentor make a list of people whom the candidate would like as recommenders, as well as a list of people the candidate would not like. But it is up to the committee appointed to research the candidate to choose who to request a recommendation from, and it may choose people from both lists. The candidate never finds out who the recommenders are.

According to Professor Hazel L. Sive, after the smaller committee assembles the candidate's information, it passes a recommendation to a larger group within the department, which could be all the tenured faculty. There may be up to four levels of review just within a department, but a minimum of two. Ultimately a decision is reached, and the department head defends the department's decision to his school's council. (For instance, the head of EECS would take a case to the Engineering Council.) The school council decides, then takes the case to the Academic Council, which passes its recommendation to the MIT Corporation. In reality, most unsuccessful cases stop at the department or school level. Winston says that department heads want to be especially sure about a candidate's success, since approving a candidate that the school council rejects "makes the whole department look weak." According to both Gray and Winston, it's rare to have cases overturned by the Academic Council, and the Corporation basically provides a "rubber stamp."

Gray says the whole process typically begins in winter and ends in the spring. Professors find out their decisions in May or June.

Future uncertain, Hudson leaves impression on MIT and students

Tenure II, from Page 14

fies best practices in this area and recommends that MIT “reward the people who are doing a good job for mentoring by giving them a little more credit for what they are doing — more visibility, more recognition,” says Kochan.

If these sound like big issues to address, they are. “There’s a lot to do,” said Kochan. “This is not a one year, or a three year, or even a five year process.”

A move, a reflection

While Kochan looks forward to revitalizing the tenure process, Hudson looks toward his next step. First, he has to tie up matters at MIT.

Because Hudson is relocating, the graduate students in his lab have to decide whether to leave with him or to find another mentor. Fortunately, Hudson recently graduated his first round of graduate students, and the two students he has now are first- and second-year, not too far into their projects. For them, “it’s a disappointment but it’s not a huge loss,” says Hudson.

As of the end of May, Hudson had not decided where he’s headed next. He wants to stay in academia, though, as he’s drawn to the feeling of discovery in research, calling it “pure joy.”

It’s certainly not an easy path. The challenge of working for tenure extends beyond research and can consume one’s personal life. “There is definitely a feeling, of [...] ‘Look, getting tenure here is hard, you should just do research, and just forget about everything else,’” says Hudson. Everything else, in-

cluding teaching, family, fun.

For Hudson, that wasn’t the way to go. “I chose just to just ignore that advice. Maybe that was bad on my part,” he laughed. “But I have a family. I have three young kids [...] so I would go home in the evenings at not too unreasonable an hour, and I would stay home on the weekends and spend some time with them. And maybe to some extent my work suffered because of that. But if it did, so be it — I wouldn’t trade the family life for even getting tenure. And with teaching it’s the same thing.”

Even though he’s leaving, Hudson has already left a mark on MIT. He’s worked to increase minority and women enrollment in the Physics Department, serving as the department minority adviser and working on several diversity panels in the School of Science and the Institute.

He’s also helped develop the 8.02 TEAL curriculum, having been staff since the first term the system became standardized, Spring 2003. He’s worked to make the curriculum “much more demanding” compared to the 80’s and 90’s, and hopes “that TEAL will stay around long after my departure and be sort of, uh, ‘Eric Hudson — he made that slide,’ or ‘He’s the reason that we’re doing these stupid back-of-the-envelope calculations,’” he joked.

Hudson has also gained from his years at MIT, doing research in a rich intellectual environment of both faculty and students. On the teaching front, TEAL changed his view of how students learn, he said. “I used to be happy to stand in front of a class, and I’ll never do that again.”

Hudson will soon be one among

the many professors who pass through MIT for a few wondrous years. Afterward, though, these professors go on to find positions in academia elsewhere, go into industry, or even start their own businesses. “The fact is that MIT faculty who are doing really well [...] get offers all the time,” said Gray. There are also non-tenured teaching positions at MIT, such as lectureships, which also offer job security, says Gray, and rarely, someone who doesn’t get a tenured appointment takes one of these non-tenure track positions.

No matter where people go or what jobs they do, the key to success, perhaps, is staying motivated despite obstacles. And it’s clear Hudson has found his motivation. “Every time a student comes into [my] office, and says, ‘I just didn’t understand that but then you explained it and now I get it.’ You know? That is so... happy!” His eyes were bright, and he beamed. “Every time I get an email from a student who says that, that just keeps me going for another year.”

Epilogue

In fact, Hudson will be going on for another year, at MIT.

He was originally offered the opportunity to stay as a senior lecturer in the Physics Department for an additional year, but following a student petition at the end of Spring 2010, the offer was extended to three years. He is teaching 8.01 this fall and possibly 8.02 next spring, and doing research at Harvard while continuing to look for a new job.

A version of this story was originally published on June 11, 2010.

E-MAIL OF THE WEEK

In an e-mail circulated around Baker House, Easeen I. Zaman ‘11 informed residents there was lobster in 3rd East:

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Women's tennis beats Smith in season opener

Freshmen Quisenberry, Hsu lead Engineers to decisive 7-2 victory over Pioneers

By Jennifer Rees
TEAM REPRESENTATIVE

This past Saturday, MIT Women's Tennis played their first match of the season against Smith College. The match started off with the doubles matches. First off was the freshmen doubles team of Lauren C. Quisenberry '14 and Julia C. Hsu '14. They breezed through their match and won decisively, 8-1. Next off were Melissa A. Diskin '11 and Katharine A. O'Neal '14. They played a tough match but lost 2-8; this made the overall score tied at 1-1. The next team to finish was Jenny C. Dohlman '11 and Jennifer A. Rees '11. They were down 2-4 in their match, but they quickly changed the momentum to win the next six games straight to take the match 8-4, giving MIT a 2-1 lead over Smith. Sonya Makhni '11 and Hillary E. Jenny '12 were the last ones on court. The match was close with both sides fighting for every point, but MIT pulled it out in the tiebreaker for the win, 9-8(5).

The Engineers carried their momentum from the doubles matches into their singles

matches. The first two matches off were Quisenberry playing one and Hsu playing two. They both won their matches with a score of 6-1, 6-2. Their strong performances brought MIT further into the lead with a 4-1 overall. Next off was Rees at seven. She finished with a score of 6-1, 6-2. Hillary Jenny at five was the next to finish. Her match had many games that went to deuce, but she was more consistent than her heavy hitting opponent and won her match 6-1, 6-3. O'Neal at three was the next to finish. Her match was close but she took the match with a score of 6-2, 6-3, further widening MIT's lead. Diskin, known for splitting sets often and for running every ball down, played a close match with her opponent. She held her long match and won 6-3, 4-6, 10-5. Dohlman also split sets with her opponent. The match was close but she lost 6-2, 2-6, 10-8. In exhibition, Makhni defeated her opponent through a match of wills and won 6-3, 6-0. The lone sophomore of the team, Caitlin R. Pomeroy '13, played two matches in singles, defeating both opponents 8-1. MIT won the match over all with the official score of 7-2.



Lauren Quisenberry '14 unleashes an explosive serve with heavy topspin. Still a freshman, Quisenberry led the victory 5-2 in first singles. RUI LUO—THE TECH

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Flying Junior sailboats race upwind after the start of a race of the Women's Toni Deustch Trophy regatta at MIT on Saturday afternoon. JORDAN T. MOLDOW



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