GOOD LUCK ON FINALS!

MIT's Oldest and Largest Newspaper

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The Tech
Established 1881

WEATHER, p. 2
TUE: 48°F | 44°F Clearing
WED: 40°F | 28°F Mostly sunny
TH: 40°F | 30°F Sunny

Volume 132, Number 60

Tuesday, December 11, 2012

Two more partners for edX in the past week

Georgetown and Wellesley join, will offer courses in fall

By Leon Lin
STAFF REPORTER

As many of edX's first courses come to a close, the online learning initiative continues to grow. EdX spokesman Dan O'Connell told *The Tech* last week that edX had reached half a million unique registrants. Yesterday edX announced its newest partner, Georgetown University, which joins just on the heels of Wellesley College, whose own addition to the list of "X Universities" was announced last week. Wellesley is the first liberal arts college to join edX.

Both Georgetown and Wellesley will begin offering courses via edX next fall, as will the University of Texas perhaps as soon as next summer, according to O'Connell. Next spring, Harvard, MIT, and UC Berkeley will be offering 15 to 20 courses, including edX's first courses in the humanities. Seven of the nine courses edX currently offers are in computer science or electrical engineering.

For most of the courses on edX, hardly an hour passes without a new thread appearing on the discussion board. The students who post include Massachusetts middle school students, Kazakhastani undergraduates, and 60-year-old corporate managers. On the forums, they share solutions after exams, report errors and glitches, compare grades, complain about the background music in course videos, advertise Facebook groups, express their thanks, and tell jokes ("metal bands are so 1980s" gets 26 upvotes on 3.091x Introduction to Solid-State Chemistry).

It's not surprising that edX students are

edX, Page 19

REPORTER'S NOTEBOOK

2.009 Product Engineering final projects

Students present projects in annual event, this year with the theme "Outdoors"

By Austin Hess
ASSOCIATE NEWS EDITOR

On Monday, students in 2.009, Product Engineering Processes, presented their final projects related to the theme "outdoors." The students, all seniors in Mechanical Engineering, worked for three months in eight color-coded teams of 15-19 students each to research markets, choose a focus, design a product, and produce a working prototype with a $6500 budget.

David Wallace, the course instructor, hosted the event in a full Kresge auditorium. The finale included live music, videos of in-class events, eight-minute team presentations, and opportunities for audience question and answer. Each team provided an overview of its target user base, demonstrated its prototype, and presented a business plan for taking the product to market.

Two of the teams focused on products for

2.009, Page 17

Central Square properties for sale

MIT maybe interested in the real estate valued at $15 mil.

By Sara Hess
STAFF REPORTER

Several parcels of land spanning a wide area of Central Square, including several prominent locations along Massachusetts Avenue, were recently listed for sale. Speculation surrounds MIT's potential interest in purchasing the properties, which include several parking lots and the Quest Diagnostics building.

Kathy Fennell and the Fennell Realty Trust are the current owners of the property — valued at over $15 million, according to a recent report in *The Cambridge Chronicle*. Fennell informed *The Tech* that the properties are being marketed by Cushman & Wakefield as a single sale but "anything is possible." The sale properties

Central, Page 17

Three anonymous reports of sexual assault at Lambda Chi Alpha

On December 5, MIT police released a police bulletin stating that they had received three anonymous reports of sexual assaults that occurred on November 2012 at 99 Bay State Road, the Lambda Chi Alpha fraternity house. The bulletin stated that there is no ongoing criminal investigation as a result of the reports. When contacted, MIT Chief of Police John DiFava confirmed that there was no ongoing investigation and declined to comment further.

"MIT takes the issue of sexual assault very seriously," Associate Vice President for Communications Nate Nickerson said in an email statement to *The Tech*. "Criminal investigations sometimes result from communications with people reporting crimes, but only if such investigations are in line with the wish for privacy, and desired level of participation, of those who have come forward."

Nickerson added, "The MIT Po-

LCA, Page 16

GREG STEINBRECHER—THE TECH

On Friday night, an MIT student punched a hole in a Baker House stairwell window. According to MIT Police Sergeant Amoroso, the individual was transported to Cambridge Hospital and no charges were filed, with further disciplinary action up to the administration. A trail of blood led from Baker, to a bathroom in the Student Center, to the corner of Ames and Amherst through the basement of the Infinite.

IN SHORT

This is the last issue of *The Tech* for the semester! We will resume publishing on Jan. 9.

The student center will be closed from 11:30 p.m. Dec. 21 until 6:30 a.m. Dec. 26. It will also be closed for New Year's from 11:30 p.m. Dec. 28 until 6:30 a.m. Jan. 2.

A community Winter Break will be held in Walker Memorial from 1:30 to 3:00 p.m. on Dec. 13. Join the MIT community for refreshments and live music!

Shuttles will be running to Logan Airport from Dec. 19 to 22 at scheduled times for a $10 fee. Make a reservation at *http://web.mit.edu/facilities/transportation/shuttles/airport.html.*

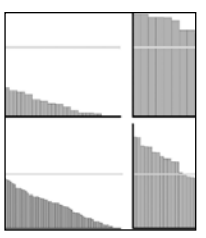
The MIT Glass Lab Holiday Sale continues today in Lobby 10 from 10 a.m. to 5 p.m.

MIT is searching for a new director of the Writing Across the Curriculum program, after director Les Perelman's retirement from the position this summer, according to search committee chair Professor Edward Schiappa. The two candidates are Steven Corbett and CMS Professor Suzanne Lane, who is currently serving as Acting Director of WAC. WAC assists in the teaching of writing in all departments, and also administers the annual Freshman Essay Evaluation. Undergraduates had the chance to meet with Corbett yesterday, and will have the chance to meet with Lane today at 4 p.m. in 14E-304.

GAY MARRIAGE: A STATE ISSUE?
Check out our point/counterpoint!
OPINION, p. 5

THE TAMING OF THE SHREW
Controversy over the morale of the story. **OPINION, p. 6**

PROBLEM BASED EDUCATION
Meshing online and hands-on learning in the classroom. **OPINION, p. 5**



HOW DO YOU FIGURE?
Struggles over getting scientific figures just right.
CAMPUS LIFE, p. 12

THE WORLD ENDS ON DEC. 21
For directions to *The Tech*'s secret bunker, see **p. 21**

SECTIONS

Bailout over, US plans to sell its holdings in AIG

Taxpayers will soon shed their last holdings in the American International Group, more than four years after a rescue by the federal government during the most chaotic days of the financial crisis.

The Treasury Department said Monday that it planned to sell all of its remaining 234.2 million shares, or 15.9 percent of the company, in a public offering. At current prices, that would raise more than $7.8 billion.

The stock sale, if completed, would realize a goal few dreamed possible in September 2008. As Lehman Bros. filed for bankruptcy, government officials scrambled to rescue AIG, which had become deeply intertwined with many Wall Street and European banks through its underwriting of credit-default swaps. The fear was that a collapse of the insurance giant could bring down the global financial system.

In the crisis, the government ended up extending lifelines to a number of financial institutions and to companies like General Motors. But it was the bailout of AIG that resonated most deeply among the American public as a symbol of risk-taking and excess on Wall Street — and Washington's complicity in it. At one point, the government had made more than $182 billion available to support AIG. Billions of that went to pay claims that the banks had on the insurer.

—Michael J. De La Merced, The New York Times

European Union officials accept Nobel Peace Prize

OSLO, Norway — Besieged by economic woes and insistent questions about its future, the European Union accepted the Nobel Peace Prize on Monday with calls for further integration and a plea to remember the words of Abraham Lincoln as he addressed a divided nation at Gettysburg.

The prize ceremony, held in Oslo's City Hall and attended by 20 European leaders as well as Norway's royal family, brought a rare respite from the gloom that has settled on the European Union since the Greek debt crisis exploded three years ago, unleashing doubt about the long-term viability of the euro and about an edifice of European institutions built up over more than half a century to promote an ever closer union.

Unemployment — now at over 25 percent in Greece and Spain — and sputtering economic growth across the 27-nation bloc are "putting the political bonds of our union to the test," Herman Van Rompuy, president of the European Council, said in his acceptance speech. "If I can borrow the words of Abraham Lincoln at the time of another continental test, what is being assessed today is whether that union, or any union so conceived and so dedicated, can long endure."

—Andrew Higgins, The New York Times

China's exports rise 2.9 percent in November

HONG KONG — Exports from China edged up 2.9 percent in November, far less than analysts had expected, highlighting the crucial role that home-grown stimulus and reforms will play in the renewal of China's acceleration while the trajectory of global demand remains highly uncertain.

After slowing sharply this year, the Chinese economy began to bottom out in September, but then perked up again. Data released Sunday reinforced the view that China would most likely avoid a sudden, sharp slowdown — a "hard landing" — at least for now.

Industrial production grew 10.1 percent and retail sales grew 14.9 percent in November from a year earlier. Both figures were higher than those recorded in October, showing that the modest rebound of the last few months had continued to gain traction.

—Bettina Wassener, The New York Times

Health insurance marketplace approved in six states

By Robert Pear
THE NEW YORK TIMES

WASHINGTON — The Obama administration gave conditional approval on Monday to health insurance marketplaces being set up by six states led by Democratic governors eager to carry out President Barack Obama's health care overhaul.

The six are Colorado, Connecticut, Maryland, Massachusetts, Oregon and Washington.

At the same time, the administration rejected pleas from other states that want to carry out a partial expansion of Medicaid, to cover fewer people than the president and Congress originally intended. Some states want to expand Medicaid to cover childless adults with incomes up to the poverty level, $19,090 for a family of three.

But Cindy Mann, the top federal Medicaid official, said the federal government would pay the full cost of newly eligible Medicaid beneficiaries only if a state raised the threshold to 133 percent of the poverty level — or 138 percent, with an adjustment allowed by federal law. This would guarantee Medicaid coverage for a family of three with income less than or equal to $26,340.

Matt D. Salo, the executive director of the National Association of Medicaid Directors, which represents state officials, summarized the administration's position this way: "No partial expansion of Medicaid. No phased-in expansion. It's all or nothing."

In upholding the health care law in June, the Supreme Court said the expansion of Medicaid was an option for states, not a requirement as Obama had argued. Still, the White House says the expansion would be a good deal for states because the federal government would pay the entire cost of Medicaid for newly eligible beneficiaries from 2014 to 2016 and then 90 percent or more of the costs in later years.

Republican governors expressed disappointment. "The Obama administration's refusal to grant states more flexibility on Medicaid is as disheartening as it is shortsighted," said Gov. Bobby Jindal of Louisiana, the chairman of the Republican Governors Association.

The White House policy, he said, "will make a state's decision on Medicaid expansion more difficult."

In a letter last week, Jindal and 10 other Republican governors asked Obama to meet with them to discuss Medicaid.

Bruce Siegel, the president of the National Association of Public Hospitals and Health Systems, praised the administration's decision on Medicaid, saying it was consistent with the letter and spirit of the law, "to expand health care coverage as broadly as possible."

The administration announced its policies in answering questions that state officials had asked about the expansion of Medicaid and the creation of online supermarkets known as health insurance exchanges.

Starting in 2014, the federal government will require most Americans to have health insurance, and it will offer financial assistance to millions of people to help them pay premiums.

Chinese police detain Tibetans in self-immolation protests

By Edward Wong
THE NEW YORK TIMES

BEIJING — Chinese police officials have detained a Tibetan monk and his nephew and accused them of playing a role in a series of self-immolations, according to Xinhua, the state news agency. The move appeared to be part of a campaign to prosecute Tibetans who are accused of aiding others who set fire to themselves in protest of Chinese rule.

The police said the monk who was detained — Lorang Konchok, 40, of the Kirti Monastery in Sichuan province — was connected with eight self-immolations, Xinhua reported Sunday.

The two men were apparently detained in August; it was unclear why Xinhua did not report on them until now.

The Kirti Monastery, in the town of Ngaba, has been central to the wave of self-immolations that began in Tibetan areas in February 2009, when a young monk from Kirti named Tapey set himself on fire in the center of Ngaba. Nearly 100 people in Tibetan regions of China have set themselves on fire to protest Chinese rule, including three over the weekend, according to Tibetan exile groups.

The Xinhua report said that Lorang Konchok and his nephew, Lorang Tsering, 31, were suspected by the police of passing on information about the identities and backgrounds of Tibetans who have self-immolated to exiles in India, where a Tibetan government-in-exile is based and where the Dalai Lama, the spiritual leader of the Tibetans, lives. Some of the information and photos were sent using a cellphone, the report said,

Xinhua said Lorang Konchok became involved after being contacted by a "Tibetan independence organization" tied to the Dalai Lama after Tapey's self-immolation in 2009.

Referring to the monk and his nephew, the Xinhua report said that "the two men had persuaded several people to attempt self-immolation, who abandoned the idea after their families, local government officials and police officers intervened."

The detention of the two men appeared to be part of a concentrated effort to rein in the self-immolations, which have gathered pace in recent months; in November they occurred nearly every day.

An editorial published Dec. 3 in a newspaper in a Tibetan area of Gansu province said China's supreme court, prosecution agency and Ministry of Public Security had issued "guidelines" that said "the act of self-immolation by Tibetans is a crime." The guidelines said that assisting or encouraging self-immolations was considered intentional homicide, and that those who committed self-immolation were also criminals.

WEATHER

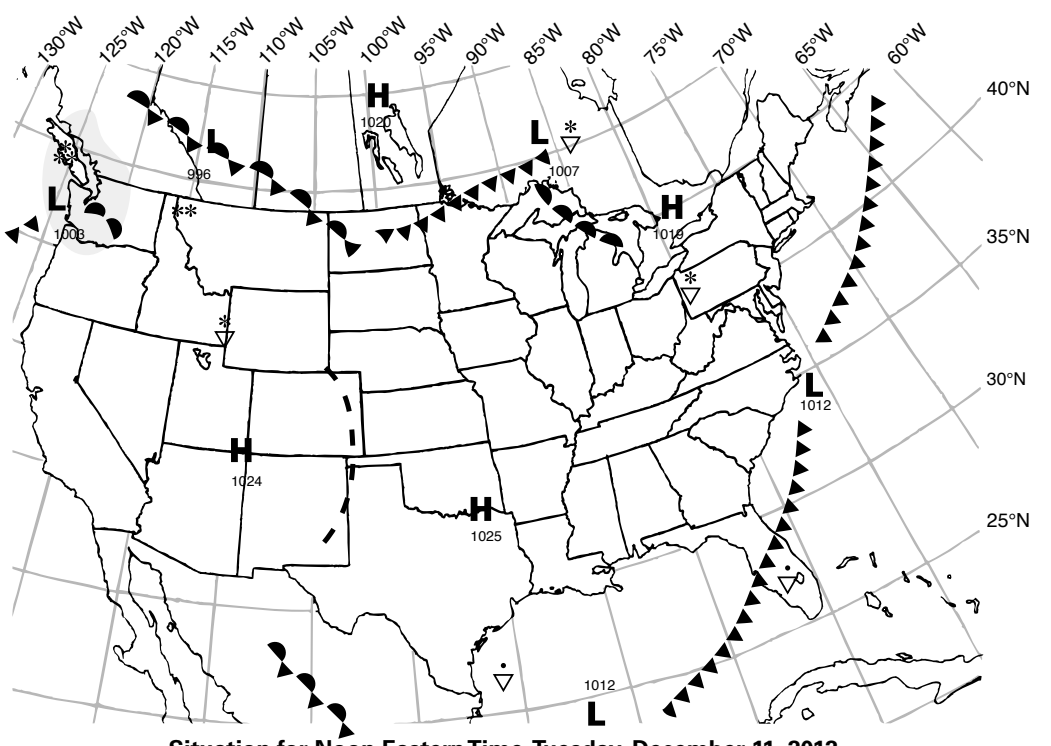
Seasonable temperatures and clear skies will be returning this week

By Roman Kowch
STAFF METEOROLOGIST

Breezy conditions today will allow cool air to push through New England. A low pressure system, responsible for the rainy weather yesterday, will continue moving northeastward through southern Quebec. The same system brought a cold front through our region last night. The front shifted the winds from southerly to northwesterly, transporting much cooler air into our region. This overall pattern will continue through the week, with winds easing up as a high pressure center anchors itself over the eastern U.S. Dry conditions will prevail under the high, and overall temperatures will be at normal December levels. Lighter winds and clear skies will keep the cool air mass firmly in place through Friday. Any unsettled weather should hold off until next weekend, when the high departs into the Atlantic and a new storm emerges in the Midwest.

Extended Forecast

Today: Less clouds. High 48°F (9°C). W wind 10-15 mph.
Tonight: Mostly clear. Low 28°F (-2°C). W wind at 10 mph.
Tomorrow: Mostly sunny. High 40°F (4°C). NW wind at 5-10 mph.
Thursday: Sunny. High near 40°F (4°C). Low near 30°F (-1°C). Light winds.



Situation for Noon Eastern Time, Tuesday, December 11, 2012

US forecast as No. 2 economy, but energy independent

By Thom Shanker
THE NEW YORK TIMES

WASHINGTON — A new intelligence assessment of global trends projects that China will outstrip the United States as the leading economic power before 2030, but that America will remain an indispensable world leader, bolstered in part by an era of energy independence.

Russia's clout will wane, as will the economic strength of other countries reliant on oil for revenues, the assessment says.

The product of four years of intelligence-gathering and analysis, the study, by the National Intelligence Council, presents grounds for optimism and pessimism in nearly equal measure. The council reports to the director of national intelligence and has responsibilities for long-term strategic analysis.

One remarkable development it anticipates is a spreading affluence that leads to a larger global middle class that is better educated and has wider access to health care and communications technologies like the Internet and smartphones. The report assesses global trends until 2030.

"The growth of the global middle class constitutes a tectonic shift," the study says, adding that billions of people will gain new individual power as they climb out of poverty. "For the first time, a majority of the world's population will not be impoverished, and the middle classes will be the most important social and economic sector in the vast majority of countries around the world."

At the same time, it warns, half of the world's population will probably be living in areas that suffer from severe shortages of fresh water, meaning that management of natural resources will be a crucial component of global national security efforts.

But these developments also bring significant risks, allowing radicalized groups to enter world politics on a scale even more violent than that of current terrorist organizations by adopting "lethal and disruptive technologies," including biological weapons and cyberweapons.

Technical glitch delays rocket launching, North Korea says

By Choe Sang-hun
THE NEW YORK TIMES

SEOUL, South Korea — North Korea said Monday that a technical glitch had been found in the rocket it had planned to launch as early as this week to put a satellite in orbit, but that it still planned to try the launching by the end of the month.

North Korea announced on Dec. 1 that it would launch the rocket, called the Unha-3, sometime between Monday and Dec. 22. But on Sunday it said it might have to postpone the launching, without specifying a reason, prompting speculation in the region about what motivated the delay.

On Monday, a spokesman for the Korean Committee of Space Technology said scientists had found "a technical deficiency in the first-stage control engine module" of the three-stage rocket. Although the preparations to launch the rocket were nearly complete, the spokesman was quoted by the state-run Korean Central News Agency as saying that scientists were forced to extend the window for a launching by a week, until Dec. 29.

North Korea said it was exercising its right to the peaceful use of space technology by using the rocket to put a scientific satellite, called Kwangmyongsong, into orbit. But the U.N. Security Council, as well as the United States and its allies, say North Korea's purpose is to develop the ability to deliver a nuclear warhead on a long-range ballistic missile. North Korea is banned from testing such technology under U.N. resolutions, and sanctions have been imposed over its previous tests.

US designates a militant Syrian rebel group as terrorists

WASHINGTON — The United States has formally designated the Al Nusra Front, the militant Syrian rebel group, as a foreign terrorist organization.

The move, which was expected, is aimed at building Western support for the rebellion against the government of President Bashar Assad by quelling fears that money and arms meant for the rebels would flow to a jihadi group.

The designation was disclosed Monday in the Federal Register, just before an important diplomatic meeting in Morocco on the political transition if Assad is driven from power. That meeting is scheduled for Wednesday.

The decision to designate the group, the register notes, was made by Secretary of State Hillary Rodham Clinton on Nov. 20, in consultation with Attorney General Eric H. Holder Jr., and Treasury Secretary Timothy F. Geithner.

The State Department appeared to delay the publication of the decision to synchronize it with the expected announcement in Morocco that the United States will formally recognize the Syrian opposition.

The notice in the register lists the Al Nusra Front as one of the "aliases" of al-Qaida in Iraq.

—Michael R. Gordon, The New York Times

Chinese telecom company to open research center in Finland

PARIS — Huawei Technologies, a Chinese maker of telecommunications equipment, said Monday that it planned to open a research and development center in Helsinki next year, accelerating its investments in Europe, where its business is expanding rapidly.

The move illustrates a trans-Atlantic difference in attitudes toward Huawei. The company has been largely shut out of the U.S. market for network gear because of congressional concerns about possible security threats — fears the company insists are unfounded.

While Huawei has faced difficulties in some European markets, like France, it has done better elsewhere. Huawei employs more than 7,000 people in the region, and it says that total could double in the next three to five years. Huawei already has a research center in Italy and is studying the possibility of opening one in Spain. It also recently announced a $2 billion investment in Britain.

The planned center in Helsinki, involving an investment of 70 million euros, or about $90 million, will work on smartphone development, including features like user interfaces and power management, the company said. When the center opens next year, it will employ 30 people, but this could grow to 100 over the next five years, the company said.

—Eric Pfanner, The New York Times

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LETTERS TO THE EDITOR

A win for the gay and lesbian community

The election this November was big for the gay and lesbian community. Not only did Maryland become the first state to legalize same-sex marriage via public ballot after thirty-two failed attempts, but we also saw victory in three other states: Maine and Washington endorsed a move to allow same-sex marriage, while Minnesota voters shot down a proposition to constitutionally ban same-sex marriage.

I cannot describe to you the joy I felt watching these votes happen in real time. As numbers climbed in favor of same-sex marriage, my girlfriend (whose home state, incidentally, is Maryland) and I grew less and less able to keep smiles off our faces. And when Maryland was finally called, there was nothing in the world that could have lessened our exhilaration. Finally having numerical proof that a majority of the state you live in thinks that you, too, should have basic civil rights is really marvelous, especially when you’ve spent years seeing the opposite reflected in state constitutions nationwide.

Unfortunately, not everyone realizes how important this issue is to the people around them. It’s easy to live in a bubble and support “traditional marriage” on principle, but it’s not so easy to pop the bubble and take a look at the people affected by these laws. Take, for example, the thousands of kids who are struggling with their sexuality, not because homosexuality is inherently unhealthy, but because so much of society claims as much on outdated and misguided “evidence.” The more people who proclaim that gay people are, by virtue of their sexuality alone, mentally unsound or engaging in dangerous behaviors or living unhealthily, the more it affects gay youth.

There’s a reason suicide rates among LGBT (lesbian, gay, bisexual, and transgender) adolescents are so high, and it is not because being gay equates to being suicidal. It’s because they are blindly discriminated against and bullied by their teachers, classmates, and families. It’s because, by upholding the Defense of Marriage Act and amending constitutions to ban same-sex marriage and allowing businesses to discriminate on the basis of sexuality, the government of the United States of America tells everyone who identifies as gay that they are not welcome here.

> **There’s a reason suicide rates among LGBT (lesbian, gay, bisexual, and transgender) adolescents are so high, and it is not because being gay equates to being suicidal.**

This was a part of my experience in middle school and high school. While I was lucky enough to go to a fairly liberal school, I was not lucky enough to avoid discrimination. I remember spending weeks and weeks arguing with myself over whether or not I could safely come out in school; when I finally did, I was met with confusion and offers of counseling, as if I had suddenly gone from straight-A teachers’ pet to delinquent. But I hadn’t done anything wrong; I hadn’t changed, and I was perfectly mentally sound.

What I needed was support. I needed someone to tell me that it didn’t matter who I loved as long as I treated them right; I needed a community that didn’t care one whit what my sexuality was as long as I was a good person.

What I’m trying to say is that this country needs to realize that gay citizens are just as healthy or unhealthy as straight citizens; the distinction is nearly irrelevant. Allowing two people who love each other to say so in a legally binding way will not in any way damage or even fundamentally change the “institution of marriage.” (You’d think that marriage as it is today is some perfectly holy and divine institution. I somehow doubt it, with current divorce rates averaging around 50 percent.) I don’t understand how someone can believe that short-lived opposite-sex celebrity marriages are somehow better or more worthy than the marriage of two people of the same sex who have been together for decades.

This election has given me hope, because it’s so indicative of the increase in public support for same-sex marriage. Decisions in Maryland, Washington, Minnesota, and Maine weren’t made by policymakers or in courts: they were made by voters. While it’s unsettling to think about my rights being put to a popular vote, I am relieved to see that the citizens of this country see me and this vast community as citizens as well, that the majority of people think my love is valid and legitimate. Because that’s what marriage is all about, isn’t it? Just love, pure and simple.

Pauline Varley ’15

Before looking at ‘gay marriage’, let’s examine marriage itself

By Cory Hernandez

The definition of marriage has changed drastically over time. While I obviously do not have space to write the entire history of the institution of marriage (you can read plenty of books that do, though), I’ll try to provide a brief summary.

> **While some remnants of past definitions of marriage still exist, it has clearly changed a lot over the past millennia.**

Marriage used to allow for different kingdoms and lands to be joined under one ruler. Marriage used to be a contract between a father and a husband-to-be (hence why a father still “gives away” his daughter to her groom). Marriage used to be a husband taking control over his wife’s assets and identity (hence why a wife still changes her last name to her husband’s). While some remnants of past definitions of marriage still exist, it has clearly changed a lot over the past millennia.

There have also been a variety of restrictions placed on and lifted from marriage. Marriage is still only between two heterosexual people. Marriage is now permitted for people of different races or ethnicities. Marriage is also permitted for people who are not in love, who are not religious, and who are not able to have children.

Given that marriage has changed so much over time since government has become involved, that various restrictions have been added, lifted, and altered, and that some people are still unable to marry, one has to wonder: why is the government involved at all? If religion is anywhere in your answer, I’ll show you the First Amendment, and tell you that couples who want to can marry within their religion. If your answer includes anything about “healthy, long-term relationships”, I’ll ask you why the government in no way checks that the couple’s relationship is “healthy”, or will last a particular amount of time and permits divorce (see: Kim Kardashian or Britney Spears). If your answer is that the

> **One has to wonder: why is the government involved in marriage at all?**

Marriage, Page 6

CORRECTIONS

The caption to the front page photo in last Tuesday’s issue stated that the MIT cogeneration plant supplies “only a fraction” of the electricity used on campus. While it typically does not supply all of the electricity used on campus, it usually supplies the majority of it. Just prior to the outage last week, it supplied 22 MW out of a total 27 MW.

An infographic accompanying Director of Mental Health Alan Siegal’s letter in Friday’s issue said that 878 undergraduates and 1048 graduate students visited the hospital. For clarification, those numbers refer to visit numbers of students who were seen at MIT Mental Health and Counseling on campus.

OPINION POLICY

Editorials are the official opinion of *The Tech*. They are written by the Editorial Board, which consists of Chairman Aislyn Schalck, Editor in Chief Jessica J. Pourian, Managing Editor Connor Kirschbaum, Executive Editor Ethan A. Solomon, and Opinion Editor Andy Liang.

Dissents are the signed opinions of editorial board members choosing to publish their disagreement with the editorial.

Letters to the editor, **columns**, and **editorial cartoons** are written by individuals and represent the opinion of the author, not necessarily that of the newspaper. Electronic submissions are encouraged and should be sent to *letters@tech.mit.edu*. Hard copy submissions should be addressed to The Tech, P.O. Box 397029, Cambridge, Mass. 02139-7029, or sent by interdepartmental mail to Room W20-483. All submissions are due by 4:30 p.m. two days before the date of publication.

Letters, columns, and cartoons must bear the authors’ signatures, addresses, and phone numbers. Unsigned letters will not be accepted. *The Tech* reserves the right to edit or condense letters; shorter letters will be given higher priority. Once submitted, all letters become property of *The Tech*, and will not be returned. Letters, columns, and cartoons may also be posted on *The Tech*’s Web site and/or printed or published in any other format or medium now known or later that becomes known. *The Tech* makes no commitment to publish all the letters received.

Guest columns are opinion articles submitted by members of the MIT or local community.

TO REACH US

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POINT/COUNTERPOINT

In defense of DOMA

By Tea Dorminy

This week, the Supreme Court agreed to hear a case seeking to force states to permit gay marriage. Many expect the Court to force nationwide gay marriage, and in most of the US, gay marriage is indeed popularly supported. While many laud gay marriage as the natural consequence of homosexuality being normal, and many college students have a homosexual experience at some point, homosexual behavior and homosexual commitment are very different. Before encouraging gay marriage, we should examine the effects of homosexual commitments: even pro-gay-marriage scientific studies show that long-term homosexual commitment is very unusual, and strongly correlated with depression and suicidal tendencies, even with societal support.

Long-term homosexuality is very rare, indicating that it constitutes a deviant, rather than normative, sexual behavior

First, long-term homosexual relationships are rare in most animals, including humans. In other species, while homosexuality has been frequently observed, long-term homosexuality is very rare, indicating that it constitutes a deviant, rather than normative, sexual behavior in general. Homosexual relationships are also less stable than heterosexual marriages. Data from Vermont (Solomon and Rathblum 2004, in favor of gay marriage) showed that homosexual couples in civil unions had considered or discussed ending their relationships just as frequently as married heterosexual relatives had. At the same time, homosexual relationships lasted on average just two thirds as long as heterosexual relationships. Even though these long-term relationships were validated by society, they showed higher instability than similar heterosexual marriages, which leads to lower family success rates and likely psychological damage to the next generation.

Furthermore, human homosexuality has been correlated with an increased risk for mental health problems, including suicide and depression (for instance, see Remafedi et al. 1998, in favor of gay marriage). While this may be caused by societal pressures, data from the Netherlands (Sandfort et al., 2006), where homosexuality is much more socially acceptable than it is here, shows a statistically significant difference in acute mental health problems between homosexuals, bisexuals, and heterosexuals. The correlation seems inescapable — the encouragement of homosexuality should only come with increased availability of mental health resources and an understanding that homosexual behavior often correlates with poor mental health.

I support individuals' sexual freedom; I am libertarian and bisexual. However, given the apparent deviance of homosexuality, it seems that encouraging homosexual exclusivity is against society's obligation to safe, healthy social behaviors, at least without additional local data contradicting our current experiences. Homosexuality should be coupled with increased mental health support, not with encouragement to commit to long-term dangerous behaviors, and this can only be done together at a local level, not by requiring states to conduct gay marriages despite majority opposition. I hope the Court upholds the ability of states to choose to not recognize gay marriage, and I encourage the reader to research the psychological effects of gay marriage before making a conclusion for one's self.

Tea Dorminy '13

Bring DOMA down

By Andy Liang
OPINION EDITOR

In 1996, Bill Clinton enacted the "Defense of Marriage Act" (DoMA), which federally denies the recognition of legal marriages between same-sex partners. But currently, Connecticut, Iowa, Massachusetts, New Hampshire, New York, Vermont, District of Columbia, Maryland, Washington, and Maine, recognize gay marriage, directly contradicting DoMA, and challenging its constitutionality. Since 1996, state-by-state, a social injustice is being corrected; gay people and their allies everywhere are fighting for the legalization of gay marriage, and the 1,138 rights that come with them. With the coming event of the Supreme Court's hearing of DoMA, gay people may finally marry their partners, and claim first-class status in a country that prides itself in allowing life, liberty, and pursuit of happiness.

DoMA is unconstitutional in its original form. It directly violates the Full Faith and Credit Clause of the US Constitution, which states that "Full Faith and credit shall be given in each state to the public acts, records, and judicial proceedings of every other state. And the Congress may by general laws prescribe the manner in which such acts, records and proceedings shall be proved, and the effect thereof." In other words, what is legal in one state must be legal in the other states. But currently this does not apply to gay marriages. If you were married here in Boston, Massachusetts and decide to relocate to Minneapolis, Minnesota, you would be seen as two individuals. Whether you have a house with your spouse, or have lived together for 20 years, or have children together, states without marriage would see your Massachusetts marriage license as sham. The Constitution was not constructed to contradict itself, so why would this the case be for gay people?

Even if you disagree with homosexuality, you must recognize that gay people are still people. And people deserve their rights. A marriage license holds the access to those rights, approximately 1,138 rights: joint adoption and foster care, inheritance to spouses' property, joint tax filing, right to making medical decisions, etc. Without these rights, gay couples are devalued. Essentially, they are being told they cannot sustain a marriage, or a family, or a child. Gay people, who have made a life for themselves, who wish to surround themselves with loved ones, following their peers, are forced to live with these life-changing alterations.

DoMA is unconstitutional in its original form. It directly violated the Full Faith and Credit Clause of the US Constitution.

In Carson City, Nevada, July 20th 2012, Brittney Leon and Terri-Ann Simonelli checked into Spring Valley Hospital expecting to deliver their baby together. They had lived together for six years, and are expecting to see their child arrive that day. But when identifying themselves, the admissions officer refused Simonelli from being allowed to make medical decisions during her partner's Leon delivery. Their document proving domestic partnership deemed useless; they would need an attorney. Simonelli, now considered an acquaintance, was left waiting outside. When she finally asked a nurse about Leon's condition, she was told that Leon was in the recovery room. They had lost their baby.

Perhaps Simonelli's being in the delivery room would not have changed the outcome. Perhaps nothing could have been done. But there is an unspeakable sadness in losing a child when you cannot be there, mentally, physically, or legally. With DoMA, gay people will always be considered second-class citizens. They will live their lives without recognition, and without protection. Our nation can correct this. The Supreme Court only has to see the hurt DoMA is doing to gay people everywhere.

Problem-based education; changing the model

By Sam Shames
STAFF COLUMNIST

MIT loves hands-on learning. We see it everywhere, in lab classes, in the UROP programs, even in the motto itself, Mens et Manus. Many of the best classes at the Institute are centered around the union of hands-on learning and lecture-style learning, encouraging students to take the concepts and equations from lectures and apply them to different real world hands-on applications. This model has been tremendously successful and has helped propel MIT and its students to the place it is today.

Despite its past success, the traditional intersection between classroom and hands-on learning is being disrupted by online education. Online education offers students a chance to learn the same concepts and equations that are currently taught during a lecture, but at the pace of each individual student, combined with instantaneous feedback.

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MIT has been proactive thus far, helping to drive online innovation and studying the ways in which it can impact residential education. Particularly promising is the way in which online education, like edX and MITx, opens new avenues for combining lecture style learning with hand-on learning. Online education has the potential to transform hands on learning by centering education on real world problems and empowering students to learn, on their own, the concepts, equations, and analytical tools necessary to solve these problems.

Today, hands-on learning is driven by lecture-based learning. First, students learn some concept or equation in lecture, and then they are asked to apply what they have been taught in the form of some project or lab. Imagine, however, if the reverse were true: students are first challenged with some project or lab; and in order to complete the challenge, the students need to learn the same course material normally covered in lecture. However, instead of learning the concepts and equations during a traditional lecture, the students in this class teach themselves these concepts using online tools like edX. This approach offers several advantages over the traditional concept first model.

One of the biggest benefits of this change is that every topic covered is naturally embedded in a real world application. Rather than teach students about circuits in a vacuum, a student would be forced to learn how to build circuits so that they can create a processor for the robotics project they are working on in class. Embedding the material in a real world application better engages the student and shows them why a particular concept is useful.

Over the course of a semester long project, such as building a robot, the students are naturally exposed to the same concepts, topics, and equations that are taught during a traditional class. However, now the students have an incentive to teach themselves the material: completing their project and creating something cool. As the students complete the project, they both continue to learn and apply new to material, as well as integrate the new concepts with what they have previously learned. Most importantly, for the first time, the hands-on learning drives the online learning; students learn equations in order to solve a specific challenge they face in their project. When students can learn equations and lectures online, project based education becomes feasible and can change the way real world applications, hands on learning, and theoretical learning are integrated.

A second important benefit of problem-based learning with online material is that it frees up class time for more student-professor interactions. Now that class time is no longer dedicated to lecturing, the professors can use that time to meet with students and groups to talk about their project, offering guidance about what online material to cover, answering questions the students may have, even walking the students through mini-problems and case studies designed to illustrate different concepts. The goal is to use class time to provide face-to-face interactions that the student cannot get elsewhere.

Part of this could include professors talking about problem-solving strategies with the students, showing them how they think about the aspects of the problem. Class time could also be used for student presentations about ideas they have for the project or about the work they have done. It may even include Socratic Seminars, where students discuss case studies of problems similar to the one on which they are focusing. Of course, students can also use class time to work on their project, working in the lab or researching in the library. When students learn equations outside of class, professors become free to use class time to better engage students with the material and its applications, and students can use the professor's time more effectively, focusing on the specific concepts and applications that they have found challenging.

The benefits of problem-based learning can be realized through several models. Some classes could provide students with a single challenge or problem that the students work on all semester long. The different parts of the problem cover all the material in the class's curriculum. Other classes might give students the change to propose their own problem or project and use each student's project to teach the course material. Some classes might have students work in small groups on problems, while others may have students work individually. It may even be possible for an entire class to work on one problem, with the work divided up amongst the students.

The benefits of problem-based learning can be realized through several models.

Incorporating problem based learning into an education also promises new ways for student driven demonstrations of learning. Either in place of or in addition to more traditional exams, students can work with the professor to design their own way to demonstrate what they have learned. This could be through traditional methods like papers, posters, and presentations, but it could also be through the completion of interactive online demos, making a video tutorial, building a website where people can learn about a topic, or even some sort of service project. With each problem comes unique ways for students to demonstrate mastery of course material.

Advocates of online learning make many promises about the way in which it can transform and improve residential based learning. Online supplemented problem based learning is just one way those promise can be realized. Problem-based learning strengthens the connections between real world applications of course material and the theories and equations on which the material rests. With online education, applications of learning can become the center of education, encouraging the students to learn the theory outside the classroom so that they can fully appreciate its implications and apply them to the problem at hand. At the same time, online education frees up the problem based classroom to focus on enhanced student-faculty interactions and more effective face-to-face interaction. In short, problem-based learning is one potential model that combines online and residential education in order to realize many potential benefits.

POINT/COUNTERPOINT

A shrew tamed is no comedy

By Daniel Parker

The Taming of the Shrew is a rape story. Barring discussion of its historical significance in a time when misogynistic thought was yet undifferentiated as an academic job, not an opining one, we need to ask how to react to the play today.

> **We need to ask how to react to the play today.**

I recently saw the MIT Shakespeare Ensemble's production, and by the end I felt sick. I was reacting not only to the quality of the production, which *The Tech's* November 9th review failed to adequately critique, but to its content as well. The audience witnessed a gleeful portrayal of partner abuse, and a relationship premised on the rejection of emotional intimacy. A poor tradesman is tricked into believing he's a nobleman. He is presented a comedic play where a "shrew-woman" is first quasi-sexually assaulted and later physically and emotionally abused until her independence is wilted by the man "born to tame" her. The man subjects the woman to starvation, sleep-deprivation, and humiliation, and the success of these techniques is celebrated.

The cherry on top comes at the play's end, when the woman is forced by the tradesman to deliver a speech about good wife-hood: "I am ashamed that women are so simple / To offer war where they should kneel for peace ... Why are our bodies soft and weak and smooth, / Unapt to toil and trouble in the world, / But that our soft conditions and our hearts / Should well agree with our external parts?"

The play is a parable on gender domination. A man arrives in a town and hears rumors about a feisty woman. The female devolves into a mere object of conquest, desired not for romance but for the sake of revenge for her public expressions of anger and assertions of independence. Her sister is an object of admiration for her deference. The rest of the story is practically a catalogue of an abusive relationship.

Every character continues to drip with cruelty. In this context, the question of author's intent is hardly relevant. If the play is taken at face value, it's repulsive. If the play is a farce, it's not funny. The most difficult case is if the play is meant as a satire: the burden of dramatic and ethical integrity rests on the actors. So what does it take to carry out a work charged with moral trouble? And is a successful production of *The Taming of the Shrew* no more than an effort to raise awareness through averse conditioning?

Clearly, the act of performance can be imbued with sarcasm, criticism, or protest. But doing so isn't easy. At the same time, a performance cannot be a neutral act. The immediacy of gender violence today putrefies the core of this play. It gags and is no longer a gag. The real crime here is dispassion in the face of wrong. The problem is not the choice of the piece but a performance distanced from its utter ugliness.

The question is, what is the value of *The Taming of the Shrew*? More broadly, are "value" and "purpose" attributes rightfully assigned to dramatic material amongst other art forms? How can we interact with unethical art? This doesn't suggest censorship, only that as moral people we need to think carefully about whether, why, and how to perform a play like this.

> **As moral people we need to think carefully about whether, why, and how to perform a play like this.**

To be explicit — I am not accusing anyone involved in the production of a misogynistic play. Yet the actual show gave no sign of its generative impulse. Viewed as it was, absent of directorial guidance for the audience, its meaning and intent were precariously ambiguous, and still more so for viewers like me who didn't know about the history of controversy over interpretation of the play. We could have easily walked away from the theater having enjoyed a humorous rehearsal of brute subjugation. The most coherent strand of the piece was played by Katie Roe '14, the shrew herself, whose performance gave the solitary perceptible hint of implicit tragedy. Otherwise, if the actors aimed at mass giddiness and caricature, they succeeded, but it's not obvious what sort of success that really is.

Daniel Parker is sophomore in the Department of Political Science

The purpose of the theater is to present themes, not to teach lessons to the audience

By The Shakespeare Ensemble

Thank you for your response to our production of *The Taming of the Shrew*. Indeed, the text of *The Taming of the Shrew* can be challenging to audiences, sometimes troubling. It is a hilarious farce in places where it seems like it shouldn't be. In response to your article, many members of the show have written responses. Below are anonymous excerpts. There are two common themes:

(1) Theatrical events do not have an inherent purpose. Shakespeare did not write morality plays that beat the audience over the head with a lesson. Our goal as actors is not to interpret the text for the audience but to faithfully bring characters to life (in that regard, your response suggests that we were successful). The responsibility of interpreting the play rests with the audience, not the actors.

(2) While your reading of the play is certainly valid, it is only one of many. How do we account for the fact that every action Petruchio performs on Kate he performs in equal degree on himself? Does Bianca really represent the ideal woman or is she just better at getting what she wants in a world already filled with misogyny? What should we make of the moments when Petruchio and Kate are harmonious, laughing together in the street or happily kissing? Ultimately, does male dominance really "win" at the end?

> **While your reading of the play is certainly valid, it is only one of many.**

Even in Shakespeare's day, Petruchio and Kate's relationship wasn't blindly accepted. There is a sequel to *The Taming of the Shrew*, written by John Fletcher, the playwright who succeeded Shakespeare in his theater troupe. In *The Tamer Tamed*, Petruchio is left a widower after Kate's death and remarries Maria, a woman even more headstrong than Kate. She refuses to consummate their marriage until he repents his "unmanly, wretched, foolish life." Elizabethan audiences obviously were disturbed enough by Petruchio that they were eager to watch him get his comeuppance. *The Taming of the Shrew* was a "problem play" from the day it was written — when you stage a production of Shrew, you continue a dialogue about gender dynamics that has been continued the 1600s.

Q1: "As actors and producers, the Ensemble members' job is to host a conversation between Shakespeare and the audience. The Shakespeare Ensemble, as a group of honest artists, has no agenda to push, but simply the responsibility to perform to the best of their abilities. [...] The value of a piece of art lies in how invested it is in exploring these themes. Its message may be beautiful or perverse, but that is not the point."

Q2: "I think what's important is to emphasize the fact that "male dominance" as an ideal does not "win" in the end. The characters of Lucentio and Hortensio are both punished for their views of women as objects to be won—Lucentio's plan to deceive Baptista, which barely accounts for the fact that he needs to make Bianca fall in love with him, and Hortensio's view of the "widow" as a woman for the taking, land both of the men with unhappy marriages in which they will in no way enjoy the tyrannical control over their wives that they envisioned. Petruchio and Kate's relationship does not end in male dominance, but in a like-minded consummation.

> **Theatre is meant to astonish, confront, shock, cajole, ridicule and tantalize.**

"The show is a farce, but what makes the show an acceptable show is that the characters are real people. If we took the characters we didn't like and dehumanized them, that would be the real crime. What becomes funny then are the acts themselves and not the characters performing them. This would completely rob the play of any of its hints of tragedy. ...One effect of a subtle performance is that there are many possible interpretations of intention, and to single out aspects of the show that point out the most negative one doesn't really prove anything."

Q3: "In the vignette between the two where Petruchio asks (not demands) for a kiss, you would have to plug your ears not to hear what has become a loving union. I could continue in this vein, scene by scene, where the play supports a reading that doesn't automatically assume an ideological point of view (examples being when Kate strikes Petruchio he doesn't retaliate, the speech at the end where the wedding company listens awestruck where they had previously ostracized Kate who, by the way, has found a voice that demonstrates her own will, etc.) I think the director, Peter Brook put it best when he equated the interpretation of Shakespeare's works with looking into tea leave — you see what you want.

"Alas, the prism differs for everyone. Here is the crux of the problem — that an audience might be confounded and frustrated by the ambiguity of the play or, for that matter, Shakespeare's canon in general. His genius lies in a disappearing act and the audience is left to speculate on his intentions which will undeniably be influenced by our historical moment and culture. Where I take exception is propping up Art as moral examples. Why? Do we always need to have our egos flattered by examples of politically correct 21st century ideas? Theatre is meant to astonish, confront, shock, cajole, ridicule and tantalize. An audience not only watches plays that represent what we aspire to, but, also, what we fear in ourselves."

Q4: "The purpose of art is to make us think, to make us react, to make us more than what we were before we read/saw/heard it. Art is not something that happens to an audience, it is something they need to engage with. If it doesn't challenge them, offend them, make them think, make them feel, then it is useless. The only people for whom Taming of the Shrew was useless would be anyone who walked out unchallenged, who saw their own misogyny reflected onstage. Can the production be held responsible for attitudes an audience member walked in with?"

None of these responses are identical. The director, each cast member, each person on the production team, each member of the audience has a different take on this play - and that's as it should be. Between characters, drama comes from conflict So, too, does interesting theater arise from conflicts in opinion. Theater is designed to evoke, not to preach: plays with obvious moral lessons are intolerably boring. It's eminently okay if you disagreed with this production, but to accuse it of being immoral is to wholly misunderstand the reason we do theater. We choose to put on challenging plays precisely because the issues they address are as relevant now as they were when Shakespeare lived.

The government has no place in marriage

Marriage, from Page 4

government has an interest in helping children, I'll ask you why government spends so little on childhood education, housing, or hunger, and why couples who cannot, or do not want to, have children are allowed to marry. There really is no good reason to have the government involved in marriage.

I do not think that government should be involved in marriage at all. Nevertheless, some might say that government-recognized marriages can uniquely provide benefits to couples who have committed themselves to each other. Without marriage, patients can decide who they want to visit them or make life-determining decisions. Without marriage, the government can give tax breaks for those who have children as dependents. Without marriage, adoption agencies can allow any people in any relationship to adopt children and bring them into a home where they are wanted and cared for. Without marriage, banks can permit joint accounts between consenting people. Without marriage, the government can improve immigration laws to make it easier for people to become citizens. Without marriage, people can commit themselves to each other in whatever way they want. The government does not need marriage to grant the benefits it presently does via the institution of marriage.

When the government creates an institution, it should allow anyone to participate. If it opens a public park or swimming pool, everyone has to be able to enjoy the benefits thereof, or else it is discriminatory. However, those public provisions are inherently beneficial, whereas marriage is not. Marriage is only beneficial if it advantages certain people over others, because it is the government's way of saying that only those people deserve these benefits (and, as shown above, historically oppressing people, like women, by giving more power to men).

> **When the government creates an institution, it should allow anyone to participate.**

Currently, marriage benefits two heterosexual people (in most parts of the country), at the expense of those in queer, homosexual, trans*, open, and/or polyamorous relationships. If marriage were to be extended to all these communities, they would be able to receive the same benefits. But then, why does marriage need to be there at all? As discussed above, these benefits can still be granted to those who need and want them — without marriage.

Instead of asking for participation in the oppressive institution of marriage, the gay rights movement needs to shift its attention toward ending the higher prevalence of hunger, bullying, suicide, homelessness, violence, harassment, and sexual assault, among other issues, within the queer community (as compared to the straight cisgender community). In the end, I propose that the government get out of the marriage business entirely, and that the gay rights movement prioritize matters of higher concern.

Cory Hernandez is a member of the class of 2014

MIT's growing relevance in a shrinking world

By Praveen Subramani

I'm sitting 11,000 meters above the Atlantic Ocean, hurtling at 800 kilometers per hour towards Boston after an exhilarating week at a conference focused on smart cities in Barcelona, Spain. After spending the past three days engaging in discussions with policymakers, researchers, and businesspeople about the future of technology in cities, it has become highly apparent to me that MIT's recent efforts to expand our global education and outreach programs have truly paid off. At conferences, workshops, and business meetings around the world, MIT is globally regarded as a leader in innovative thought across a wide variety of disciplines. Faculty and graduate students are spending more time traveling than perhaps ever before, a testament to the growing international relevance of MIT in an increasingly complex and globalized world. Presenting novel ideas at conferences, teaching children in developing nations, and participating in internships in foreign countries are just samples of activities that the MIT community engage in on a daily basis to maintain our global prominence. But we must not take this reputation for granted, as it has resulted from the continued commitment of students, staff, and faculty to make MIT a truly global university. Nor can we rest on our laurels, as this dedication must continue with renewed vigor to keep MIT's researchers and alumni competitive in a shrinking world.

This dedication must continue with renewed vigor to keep MIT's researchers and alumni competitive in a shrinking world.

When I first arrived at MIT in 2006, international education was not a particularly hot topic of discussion among the student body or the faculty. Notorious for its stringent academic requirements, MIT had largely been reluctant to offer traditional study abroad programs, which faculty and administrators feared would not provide access to the same quality and rigor of the MIT residential education. With a handful of exceptions, such as the Cambridge-MIT Exchange (CME) program, relatively few programs were available to promote the participation of MIT's students in international study or work experiences. Only a minority of students considered studying or working abroad a priority for their MIT educational experience.

However, in the past six years, a remarkable transformation has taken place. Today, MIT abounds with international opportunities for its students, staff, and faculty. And in a world of heightened competition and rapid global diversification, it is critical that MIT community members are educated as international thinkers who are experienced at working across borders, rather than becoming victims of globalization.

Programs such as MISTI — MIT's International Science and Technology Initiative — provide opportunities for students to participate in internships abroad, learning not only from cultural immersion and diversity but also from the challenges of developing technology and businesses in an international context. Students can work in research labs at universities and institutions, or be matched with companies that are pioneering exciting new technologies and ideas in industry. My own MISTI experience, an internship in southern Spain in 2008, taught me the challenges of developing hardware in a country without the luxuries of overnight parts shipping and access to world class laboratory facilities. I also learned invaluable lessons about effective communication and engaging in international business that could not have been taught in any classroom. MIT now offers an undergraduate minor in Applied International Studies, which requires the participation in a MISTI internship as well as several courses on global approaches to innovation, communication, and culture.

Students who wish to pursue their own projects in the developing world can apply for funding from organizations such as MIT's Public Service Center (PSC), which provides grants and mentorship for independent research, education, and technology-deployment projects in every corner of the world from Colombia to Colombo. Those who are passionate about deploying businesses in international contexts can tap into expertise and funding from organizations such as the Desphande Center for Technological Innovation. Meanwhile, our Global Education and Career Development (GECD) office provides students access to outstanding resources and mentorship to help them apply for distinguished international fellowships such as Rhodes, Marshall, Fulbright, and Gates scholarships. GECD can also connect students with non-MIT study abroad programs and help internationally focused students fit a semester or year abroad into their undergraduate four-year plan, which can be a daunting challenge given MIT's demanding coursework requirements.

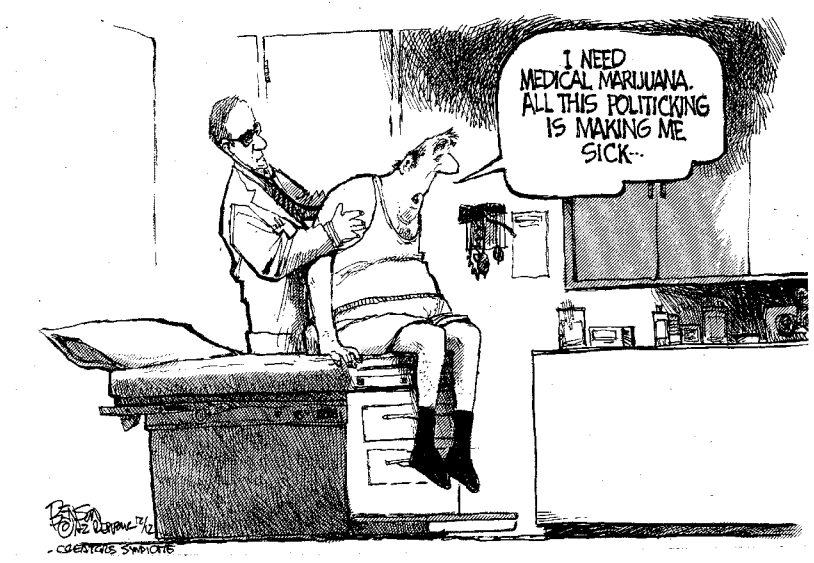
Countless workshops during the semester, IAP, and summer sessions provide students the chance to teach, work, and study abroad. There are opportunities in every field from intensive language and culture immersion programs in Madrid, to the study of Palladian architecture in Italy, to developing technologies for water treatment in southeast Asia. Recently, courses focused on providing aid to areas struck by natural disasters such as post-earthquake Haiti and post-tsunami Japan have provided incredible opportunities for students to develop new skillsets and deploy impactful projects, while assisting communities in need.

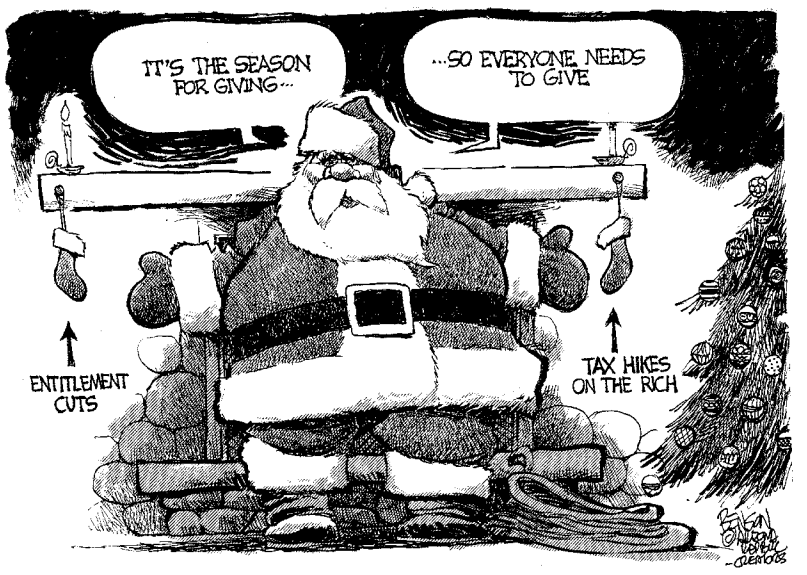
All of MIT's students should take advantage of some of these global opportunities.

All of MIT's students at both the undergraduate and graduate levels should take advantage of some of these global opportunities, or they may face irrelevance in a world where cross-cultural communication and international work experience is increasingly valuable. Whether through an MIT course that focuses a project on an international site, or through an overseas internship or public service project, these global experiences provide a rich complement to the residential campus research and educational opportunities that most students are drawn to MIT for. Undergraduate advisors should encourage students to go abroad and ensure students that a summer spent at a lab in Mexico can be even more educational, eye-opening, and career-boosting than an internship at a hot Silicon Valley tech company or New York City consulting firm. Meanwhile, graduate student advisors should encourage their students to participate in international conferences, publish in international journals, and engage in collaborative projects with institutions and companies around the globe. Graduate students should also have the opportunity to work as visiting researchers at foreign research institutions to gain international perspectives on the research process and diversify their academic exposure. Indeed, having experience at multiple academic institutions in a variety of geographies can be an important criterion for junior faculty search committees at many universities.

These global educational, research, and work opportunities are not just beneficial for students, they are vital for the preservation of MIT's reputation worldwide. In today's world of informational overload, anonymity is irrelevance. Furthermore, these international ties contribute to MIT's mission statement of "generating, disseminating, and preserving knowledge, and working with others to bring this knowledge to bear on the world's great challenges." By sharing the results of our latest research and engaging in international projects, MIT's globally mindful students, staff, and faculty function as ambassadors who disseminate the knowledge and mission of MIT while fostering vital academic and cultural partnerships for the Institute. In conjunction with our online educational programs such as edX and its predecessor OpenCourseWare, these ambassadors can impact a wider global community than ever before.

In 2013, I will move to Chile on a Fulbright Scholarship to apply my MIT educational, research, and business experiences to improving the public transportation systems in Santiago through the use of shared, lightweight electric vehicles. I am confident that my time at MIT has prepared me for a productive and engaging year in Chile. Furthermore, I know that I have an incredible global network of MIT's diverse alumni, collaborators, and friends awaiting. From the moment I chose to undertake this project, my colleagues and mentors at MIT jumped in to provide introductions to relevant people, offers of hospitality, and even restaurant recommendations for my time in Santiago. I greatly look forward to seeing my colleagues and friends from MIT, in classrooms, boardrooms, conferences, field sites, and airports throughout the world.





MIT revises bylaws: Corp. chair to lead Executive Committee

By John A. Hawkinson
STAFF REPORTER

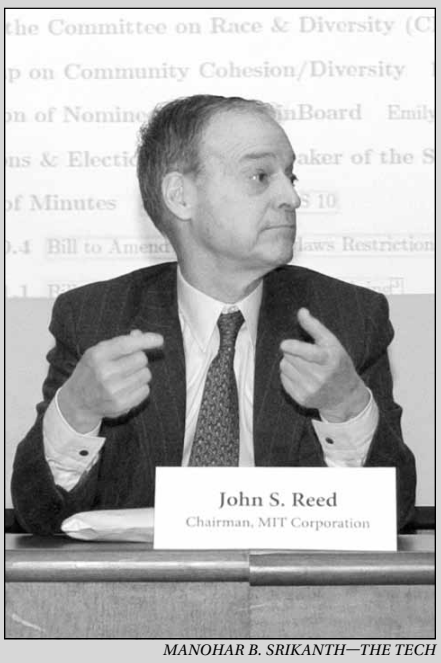
At the quarterly meeting of MIT's board of trustees — the MIT Corporation — on Friday, hundreds of changes to MIT's bylaws were enacted, both big and small.

MIT's Executive Committee saw a significant change. It is now chaired by Corporation Chairman John S. Reed '61, and not by the MIT President, L. Rafael Reif.

The executive committee has "responsibility for overseeing the general administration and superintendence of all matters relating to the Institute." Because the Corporation is so large — 72 active members — the Executive Committee is the practical manifestation of the Corporation's oversight responsibility for MIT. (The remainder of the Corporation interacts though committees, especially MIT's system of 31 visiting committees, one for each major unit of the Institute, such as departments as well as units such as Libraries.)

The Chairman will preside over Executive Committee meetings, and now holds the power to set the meeting agenda (in cooperation with the President and Secretary); he also gains slightly greater power to appoint special committees.

Reed has been a substantially more active chairman that his predecessor, Dana G. Mead PhD '67. Mead considered the chairman to be a part-time job, but Reed, a former Citigroup CEO and chairman in the 1990s, is in the office five days a week. He looks at MIT's financials in more depth than past chairmen, and has asked the Institute to do more to quantify its research outputs, such as papers, citations, and patents.



MANOHAR B. SRIKANTH—THE TECH

The executive committee may now be larger. In addition to the four officers on it, there are 7–10 members who serve for five years. Previously there were eight: five who served for five years and three who served for three years.

A paragraph granting the Executive Committee the power to dictate the duties of other officers has been removed; there is now a specific enumerated list of nine responsibilities of the Executive Committee as part of its oversight of MIT (see §14.2.4, in sidebar).

The 20-page bylaws also saw a facelift: they are now "Bylaws of MIT" and no longer "Bylaws of The Corporation." The Corporation appears not to be styling itself as a separate entity with oversight responsibility for MIT, but rather implying that its oversight is part of MIT itself.

This philosophy is apparent from other changes to the bylaws: officers are now officers of the Institute and not officers of the Corporation; the Executive Vice President is responsible for the Institute's finances, not the Corporation's.

The bylaws also now start with a preamble summarizing their purpose. After the preamble, the first section of the bylaws now sets out, in bullet form, a set of responsibilities, powers, and duties.

The revisions also update the charge to the members. No longer are they merely the "body corporate" and MIT's "Government." Now the members "hold a fiduciary duty to govern MIT, to oversee the stewardship of MIT's assets for MIT's present and perpetual well-being and stability, and to ensure that MIT adheres to the purposes for which it was established. The Corporation also has broad responsibility for the generation of new funds and assets."

Risk/Audit Committee

MIT's Audit Committee has been renamed the "Risk and Audit Committee," and it enlarged from a fixed size of five; it can now be between five and eight members.

In addition to the audit of MIT's books and financial/investment records, it will monitor MIT's "compliance with law, regulation, and standards of ethical behavior [and] risk management."

Henri A. Termeer, former CEO of Genzyme and chair of the committee, told *The Tech* last month that the new MIT administration wants to think about risk in an "organized fashion."

While the broadened committee will be identifying risk, "we're not trying to manage the unusualness of the institution," Termeer said. He expects MIT to continue to step outside the box "all of the time."

Other changes

The Corporation Development Committee, responsible for fundraising and the capital campaign, has been split. There is now a Corporation Development Committee Executive Board, with the Chairman, President, and Executive Vice President and Treasurer as *ex officio* members, as well as between three and five additional members. That CDC Executive Board will oversee a separate Development Committee with members appointed by the Corporation, including honorary members.

Minor bylaw changes include not counting former presidents and chairmen against the 25-member limit on life members; allowing more nominees from the Alumni Association for a vacancy; permitting reports of some officers to be omitted from quarterly meetings; requiring the Executive Vice President and Treasurer to be a single person; the Executive Committee approves officer compensation rather than determining it; moving from the possibility of "any investment management company" to the certainty of "the investment management company"; avoiding conflicts of interest in visiting committee appointments; etc.

The bylaws were previously revised on Oct. 3, 2008. *The Tech* has prepared a redline of the changes, available at *http://tech.mit.edu/V132/N60/corporation/bylaws-redline.pdf*.

Corporation Chairman John Reed was travelling Monday and could not be reached for comment.

Corp. Executive Committee oversight responsibilities

§ 14.2.4 Except insofar as Section 1.1 specifies actions to be taken by the Corporation itself as a whole without any delegation, the Executive Committee shall discharge the authority of the Corporation described in Section 1.1. In discharge of such authority, the Executive Committee shall have responsibility for overseeing the general administration and superintendence of all matters relating to the Institute, including the:

(a) scope and excellence of the Institute's educational and research programs;
(b) performance of the Institute's administration;
(c) financial planning, annual operating budget including tuition and financial aid, capital budget, and debt policy of the Institute;
(d) investment of the Institute's endowment and other financial assets and distributions from the endowment;
(e) construction, maintenance, and renovation of the Institute's buildings, grounds, facilities, and utilities;
(f) acquisition, disposition, development, and management of the Institute's real property;
(g) organizational structure of the Institute and the Institute's policies, systems, and controls for operations, financial reporting, risks and risk-management, audit, legal affairs, and compliance;
(h) special contract services for the Federal government and other organizations; and
(i) approval of tenure decisions and approval of such faculty and staff appointments and salaries as the Executive Committee from time to time directs.

SOURCE: CORPORATION BYLAWS. EMPHASIS BY THE TECH.

New exec board takes IFC reins

A month after they were elected, the Interfraternity Council (IFC) is being run by a completely new group. Headed by Andrew L. Dorne '14 from Phi Sigma Kappa as president, the new executive board of MIT's IFC was inaugurated on Dec. 5.

As president, Dorne says that while his biggest goal is to "develop strong bonds between different fraternities through transparency and communication," he will also work to change the perception that the fraternities have of the IFC.

"The IFC is often viewed only as a judicial body, but JudComm (our judicial committee), is only a portion of the IFC," Dorne said. "It is my vision that the IFC can be viewed as a supportive resource, bringing fraternities together to talk collectively about issues and challenges faced by the entire community."

The IFC is the governing body for the fraternity system at MIT, composed of 27 fraternity chapters and almost 25 percent of the undergraduate student population. One of the new initiatives the IFC put forward this year for its member organizations was a Presidents' Retreat. During the retreat, presidents and representatives from over 15 different fraternities met with the old and new exec members to discuss various aspects of fraternal life, according to Dorne.

"I'm extremely excited to begin working with the IFC board, our chapters, and the MIT community to take on these issues," Dorne said.

The other members of the executive board are as follows:
Vice President: Brian L. Alvarez '15 (Kappa Sigma)
Judicial Committee Chair: Evan Tencer '15 (Delta Kappa Epsilon)
Recruitment & Programming Chair: Haldun Anil '15 (Theta Chi)
Risk Manager: Jimmy J. Gomez '14 (Theta Delta Chi)
Public Relations Chair: Zev J. Bimstein '15 (Delta Tau Delta)
Executive Assistant: Samuel S. Oppenheim '16 (Zeta Psi)

—Stan Gill


JOHN A. HAWKINSON—THE TECH

The Cambridge Fire Department responded to MIT five times on Sunday night to vandalism by a Boston University student. Within a few minutes of each other, fire pull stations in the Student Center (W20) and Kresge Auditorium (W16) were pulled shortly before 10 p.m., evacuating both buildings. Within the next hour, the same happened in Building 13, where power was also lost throughout much of the building, presumably from the perpetrator flipping circuit breakers.

In the next hour, the Fire Department returned another time in response to an alarm in Building 31 (the Sloan Automobile Lab). MIT Police apprehended the suspected vandal — apparently with the assistance of MIT people who chased and caught him — and said he was a BU student.

The Fire Department returned to Bldg. 31 for the fifth and last time just after 11 p.m. in response to a water flow alarm. An emergency eyewash on the third floor had been activated, causing flooding on the third and second floors, and requiring Facilities electricians to come in and assess damage.

Cambridge Fire finally left MIT around 11:55 p.m., and MIT Facilities restored power to Bldg. 31 an hour later.

Institute Double Take

By Tiffany Ira Huang
STAFF PHOTOGRAPHER

A barred owl was spotted in the East Campus courtyard last week. Residents report having seen it and another barred owl hunting mice at night. Another barred owl (perhaps the same one!) was also spotted near the Student Center and near Simmons Hall recently.

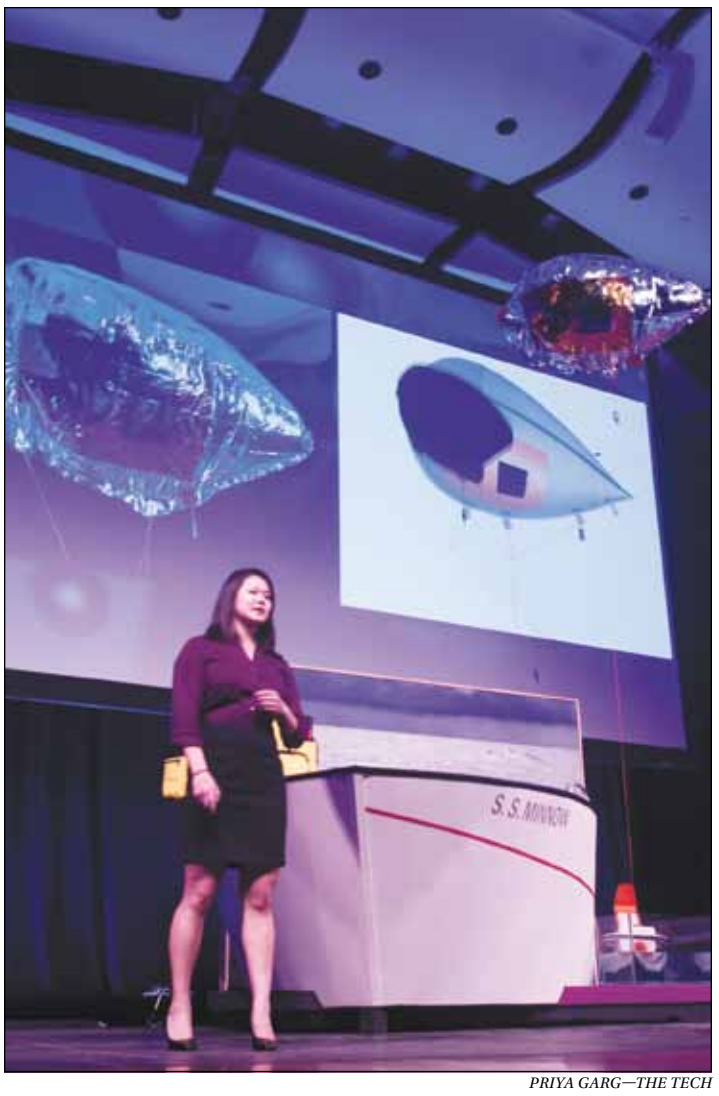
Aperture:
f/5.3
Exposure Time:
1/400 sec.
Sensitivity:
ISO 800
35mm Equivalent Focal Length:
300 mm

PRIYA GARG—THE TECH

To conclude the event, 2.009 staff exploded cannons of confetti into the crowd.

2.009

Last night, students in 2.009 (Product Engineering Processes) gave their final presentations. The seniors worked on these projects for three months, and displayed their work to a packed Kresge Auditorium.



PRIYA GARG—THE TECH

The SkyBeacon, a novel rescue beacon for ships out at sea, floats above the Purple Team.

PRIYA GARG—THE TECH

The Blue Team presents their product, StormShield, which provides environmental protection for cyclists.

PRIYA GARG—THE TECH

The Red Team presents Heatware, a flameless outdoor cooker.

PRIYA GARG—THE TECH

Following the presentations, all of the teams presented gifts to the 2.009 Professor, David R. Wallace PhD '95.

CAMPUS LIFE

THE SECRET LIVES OF RESEARCHERS

Fig. 3 versus the editor

One researcher's attempt to modernize scientific illustrations backfires

By Derya Akkaynak

"May I suggest you consult the senior authors of your paper who should know how to label a scientific graph properly so that our readers can understand them even if they are non-specialists" read the e-mail from an unnamed scientific journal's editor in chief (EIC). With my eyes and mouth wide open, I read it again: "…There is still not enough clarity about the labeling of the figures. …May I suggest …"

My manuscript had made it successfully past the peer review process based on the scientific contribution it made to the field of animal camouflage, but it turns out that was not enough for publication: the EIC was kindly informing me that it was going to take 56 more labels and 84 tick marks on Figure 3 of my article to get an official acceptance.

Take a blank sheet of US-letter size paper and write your first name 56 times. Whether it is Eli or Kananinoheaokuuhomeopuukaimanaalohilo, it will take a lot of ink! Now imagine how much more clutter there would be if that sheet of paper was no longer blank and had 28 plots on it. In the case of Figure 3, all plots had identical axes, so I did what any scientist primarily concerned with conveying her message to the reader would do: maximized the data-ink ratio by labeling the plots only once on top of the page.

Photographs, plots, charts and other visual representations of data arguably constitute the most important part of scientific communication.

The data-ink ratio concept was introduced by Edward Tufte, perhaps the most well known information design and data visualization expert. It denotes the "proportion of a graphic's ink devoted to non-redundant display of data-information". Jac-Luc Besson, another expert with a focus on effective communication of information, quantifies the same principle via his second and third laws of effective graphical displays: maximize signal-to-noise ratio, and use effective redundancy. Science photographer and MIT scientist Felice Frankel highlights that well thought-out graphics benefit authors and readers because "visually representing an idea in science not only requires an author to clarify her thinking and improve her ability to communicate with others but also leads to new insights into her work".

Photographs, plots, charts and other visual representations of data arguably constitute the most important part of scientific communication. In fact, often times a reader's exposure to a scientific paper is limited to a quick skimming of its abstract and figures. As a result, there is an implicit expectation that figures will convey the key concepts of the work, telling a reader exactly what she needs to know.

Unfortunately, this is rarely the case. An author spends anywhere between a few months to a year (or more) working on the write-up of research that may have taken much longer to develop. This prolonged and intense exposure sometimes misleads authors into thinking that their graphics are sufficiently self-explanatory; but to a first-time viewer they may appear cluttered, confusing or even incomplete. What an author decides to include in their data presentation, then, is a measure of how well they understand their data and their audience.

That was exactly my argument when I wrote to the editor that the 28 plots in Figure 3 had identical axes and therefore individual labels would be redundant. I only had the courage to write such a response because a few weeks prior to submitting my manuscript, I had attended Felice Frankel's Master Class on Engineering and Science Visualization, sponsored by the Mechanical Engineering Department. Ms. Frankel not only presented mind-blowing before-and-after versions of scientific figures and photographs, but also talked about the resistance of most journals towards accepting less traditional visualizations. In fact, one mechanical engineering professor who had helped organize the workshop said that as the editor of a journal, he often asked authors to include top and right axes with tick marks in addition to the standard horizontal and vertical axes in a two-dimensional plot, because under-labeling of the figures was more likely to confuse readers than over-labeling. Ms. Frankel's workshop convinced us all that this is not necessarily true and more often than not, less is more.

Following the workshop, I submitted my manuscript with figures that I thought had optimal layouts and data-ink ratio. The rest is history. The EIC asked for 56 more labels and many tick marks on Figure 3 so that "readers could understand them even if they were non-specialists," and I obeyed. In case you are wondering whether this was an open-access publication that many non-specialist readers may come across; it was not. In fact, I had targeted this journal because of its highly specialized reader-base. In the end, I had to obey the editor and add the requested labels.

The axis labels and tick marks I had to add to Figure 3 are minor details when compared to other challenges in visualization and presentation of scientific data. Luckily, MIT understands and supports the need to improve scientific communication and consequently push journal standards. There are lectures and workshops in any given semester with emphasis on producing better scientific photographs, finding the best forms of graphic visualization and basic design principles. Our libraries have all publications of Tufte, Besson and Frankel, in addition to many other info-graphics resources like appointments with Felice Frankel. Hopefully, journals will move to more modern and concise graphics in the future.

In the end, I had to obey the editor and add the requested labels.

Appointments with Felice Frankel can be made by emailing her at felfra@mit.edu. She preferentially schedules students in Mechanical Engineering, Chemical Engineering, and Materials Science and Engineering, but all are welcome.

This is a new column for students to share their experiences in research. Write to emoberg@mit.edu and cl@tech.mit.edu if you are interested in contributing!

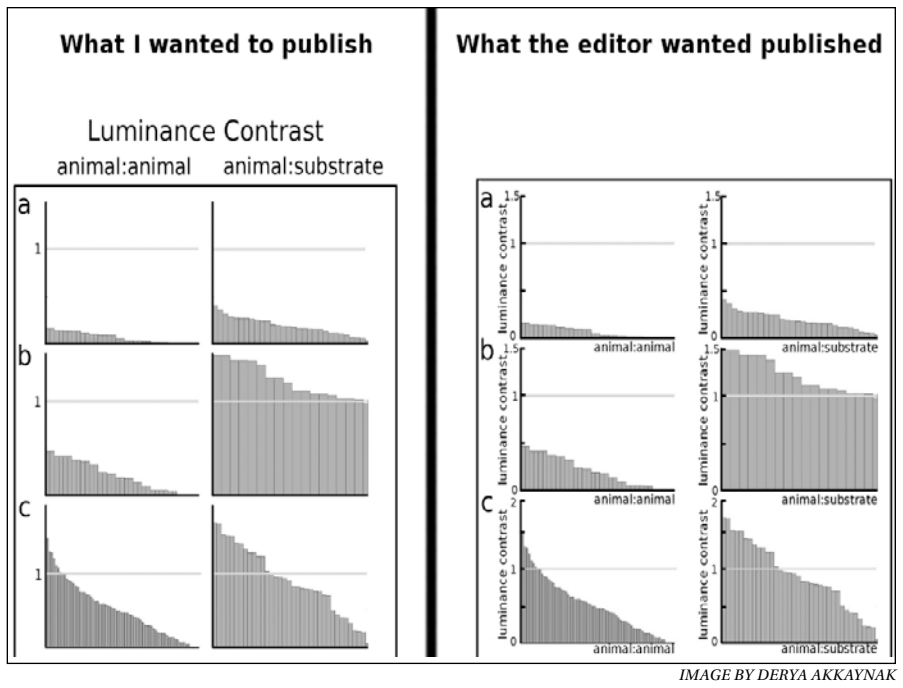
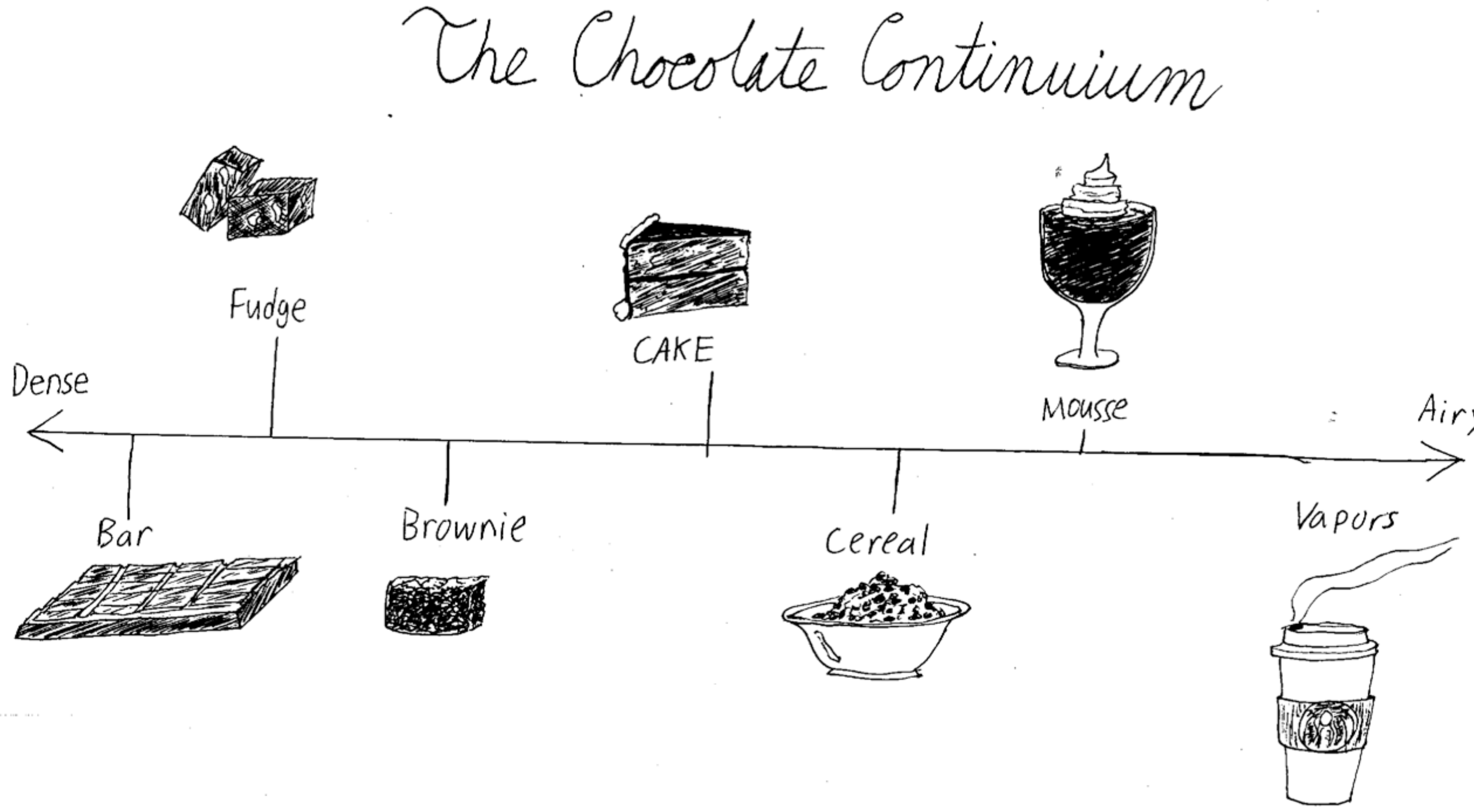


IMAGE BY DERYA AKKAYNAK

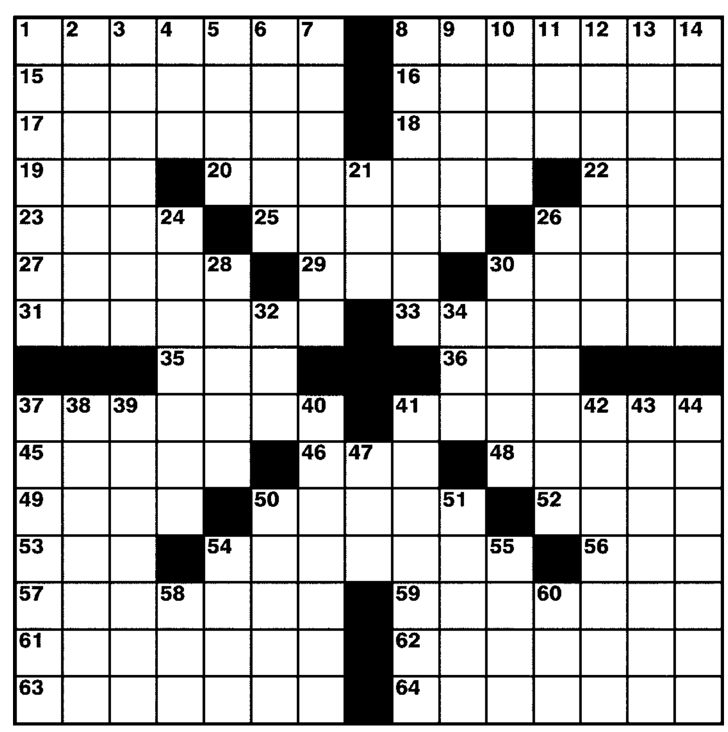
14 of the 28 plots in Figure 3 are shown here. Besides the addition of individual x- and y-axis labels for each plot, extra tick marks were added in the published version to show scale. This is unnecessary because only a luminance contrast value of 1 (green line) is meaningful; how much smaller or larger the gray bars are than this value does not offer any insight or clarification.

Strangers to Fiction by Deena Wang



Saturday Stumper by Lester Ruff

Solution, page 17

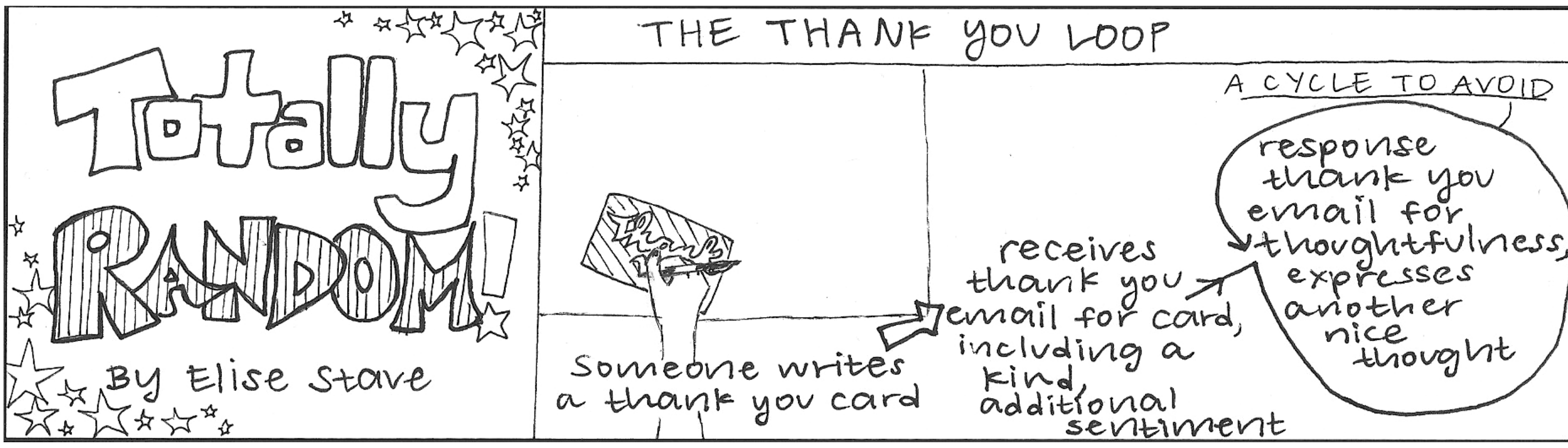


ACROSS

1 Pretty soon
8 Engages fully
15 Rescue dog, for example
16 Place of privacy
17 The eyes may have it
18 Anagram of "gyrated"
19 Start of a Genesis query
20 Honey
22 Small, in brief
23 "Ah!"
25 Discordance
26 Knight at the movies
27 Will set one back
29 It may be fishing
30 Betting settings
31 Old-fashioned
33 Show contempt for
35 Ne'er-do-well
36 Exclude
37 Where Bing Crosby grew up
41 Studio stack
45 Word from the Latin for "is lacking"
46 Its disappearance aided bald eagles
48 Need somnoplasty, perhaps
49 Nth degree
50 Works together
52 Expression for the sheepish
53 Team __
54 Author of a 50-million copy best seller
56 Caddy's holding
57 Place with a theater and bowling alley, maybe
59 Firefighters' descriptor
61 Approve of
62 Erode
63 Chinese zodiac beast
64 One caught in a trap

DOWN

1 Third most-populous English-speaking American nation
2 Born Free author
3 Furthest from aloof
4 Bars on some boxes
5 Minimally
6 Screened over
7 The very beginning
8 Creative ones
9 Onetime Einstein home
10 Antlered animal
11 Part of UNESCO's address
12 Send back, in a way
13 Lead balloon, so to speak
14 Creative one
21 Rest, with "by"
24 Reservation proof
26 Discordant
28 Barbell exercise
30 Clamors
32 Thing with a foot and a neck
34 Comcast purchase of 2011
37 See 44 Down
38 Buddy
39 Seat of Orange County
40 Emmy winner as a Roots ship captain
41 Flashing lights
42 Forebode
43 City east-northeast of Venice
44 With 37 Down, Judiciary Committee member
47 Pistachio portion
50 Plain speaking
51 Recycling candidate
54 Earth
55 Ava, in The Aviator
58 Brand owned by Clorox
60 Contend



Sudoku

Solution, page 19

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

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

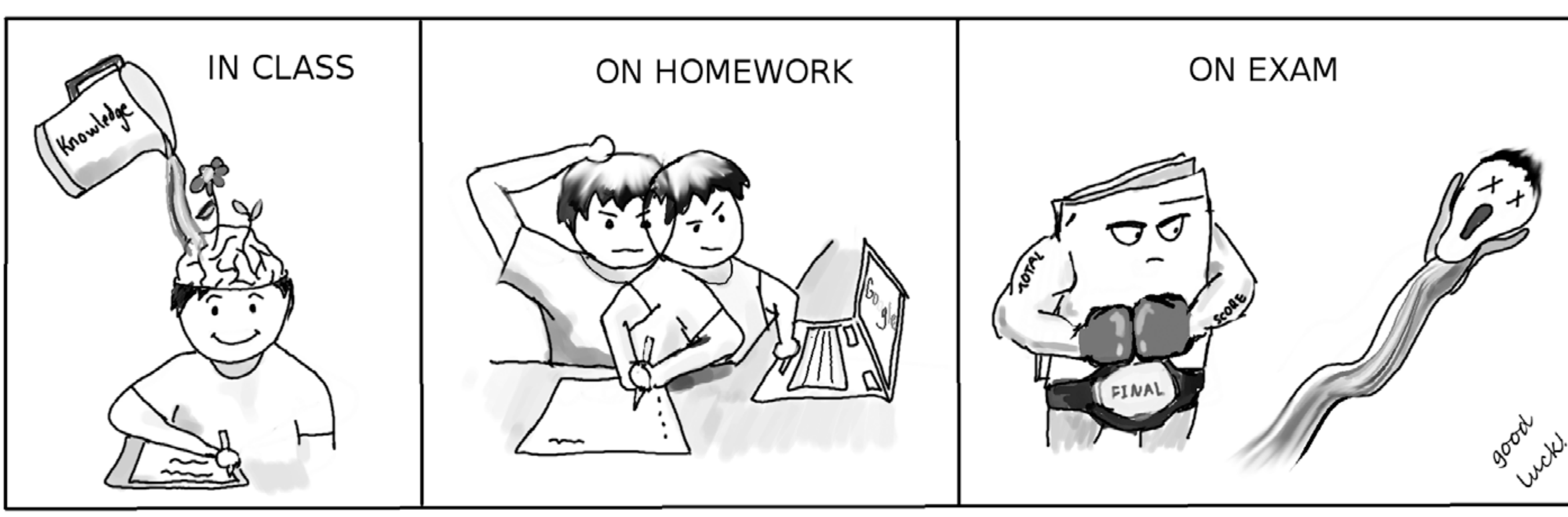
Techdoku

Solution, page 19

90×				48×	
20×	21+			6×	
			10×		1
5+	2×			24×	
		16+		5×	
7+				15×	

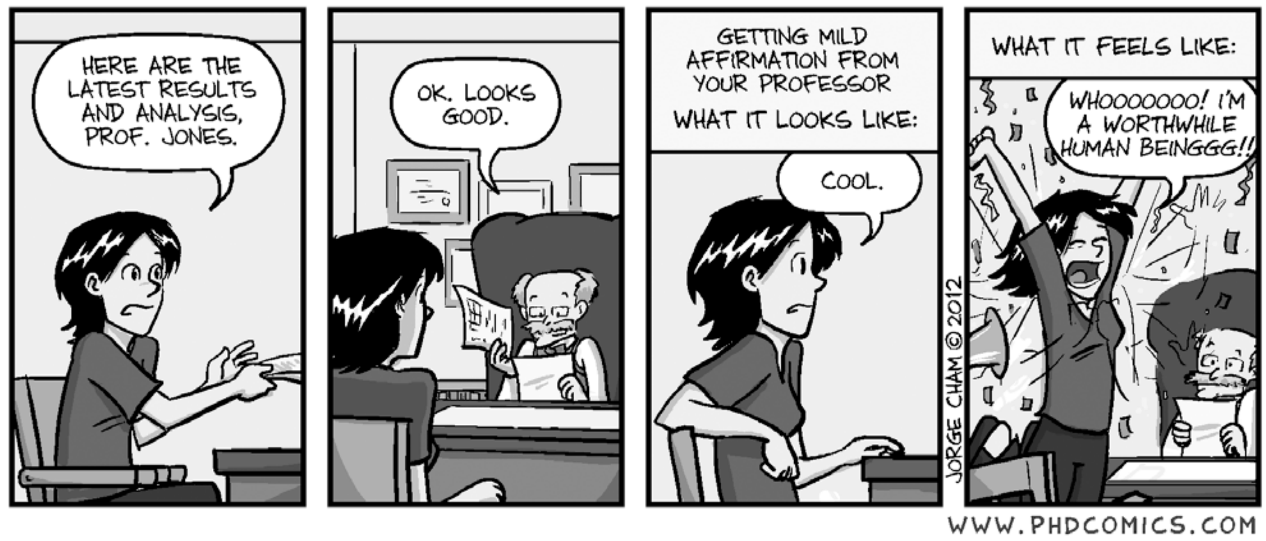
Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.

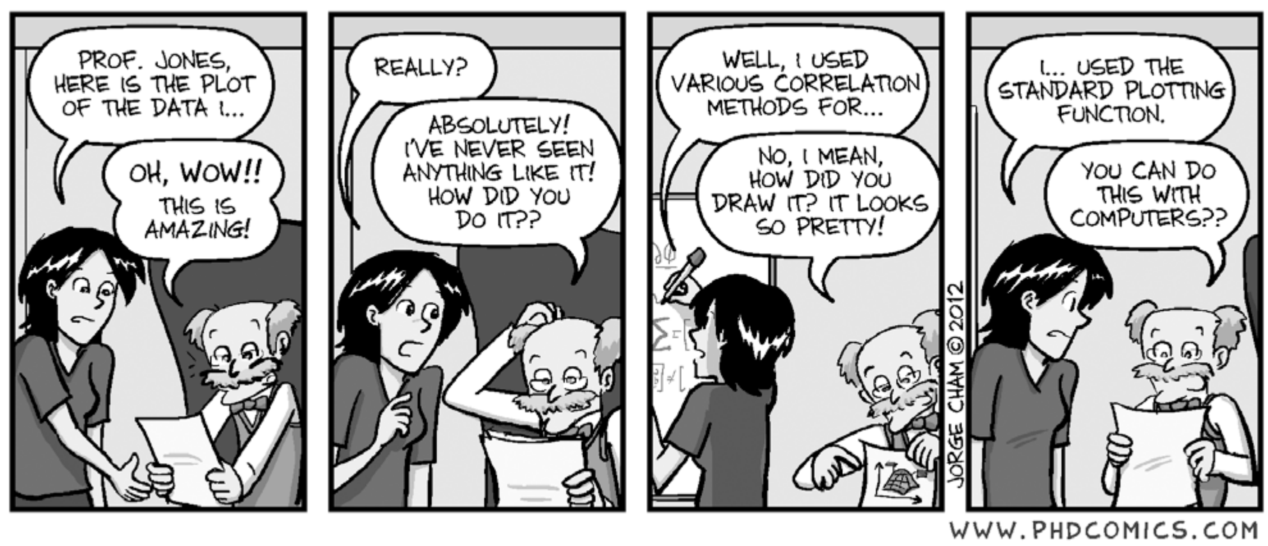
Beaver Tails by Ranbel Sun



Piled Higher and Deeper

by Jorge Cham





Sudoku II

Solution, page 19

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

Techdoku II

Solution, page 19

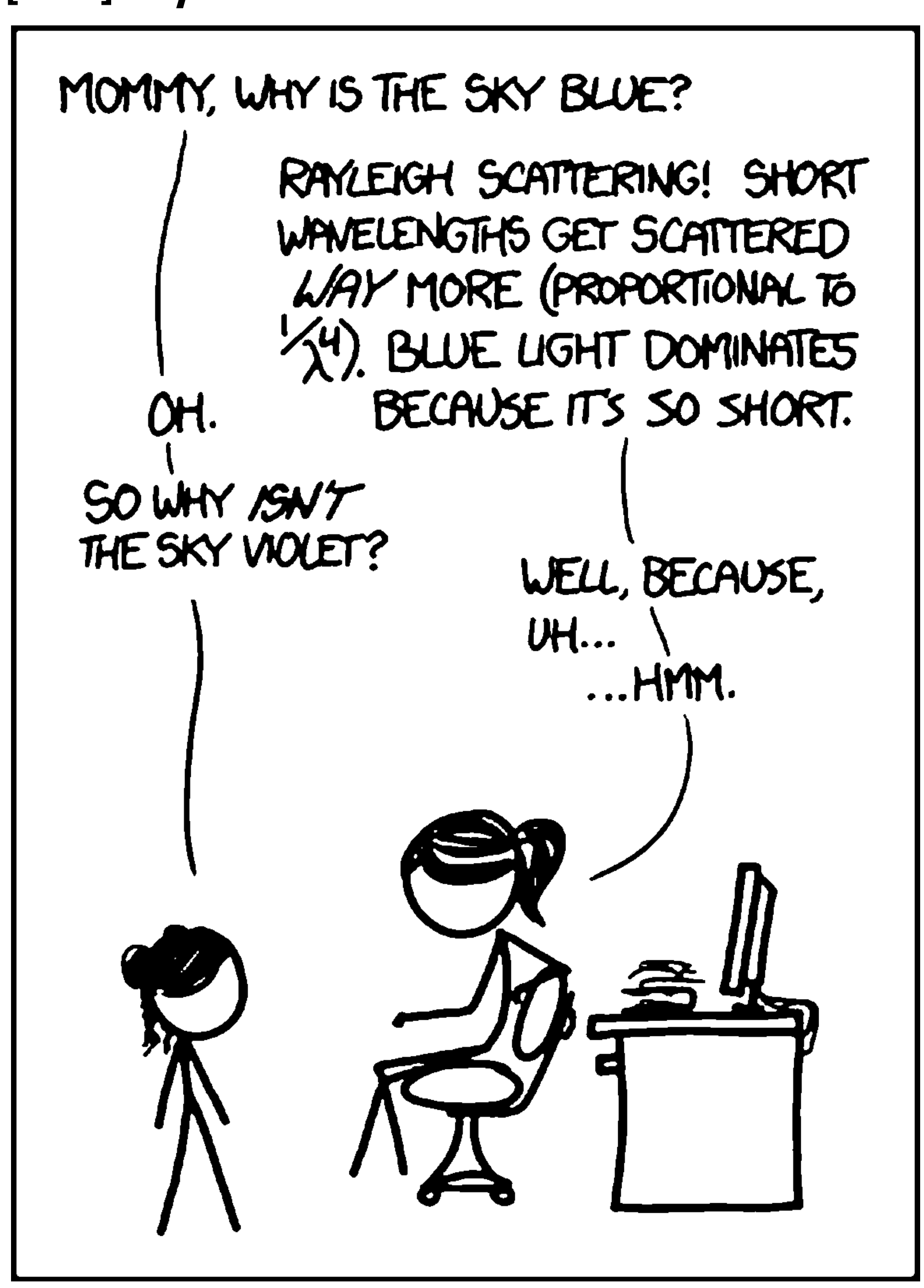
12×		20×		7+	
	15×		120×		
6		24×			3
9+				30×	4×
4	20+				
1−			1		2

xkcd

A webcomic of romance, sarcasm, math, and language

by Randall Munroe

[1145] Sky Color



MY HOBBY: TEACHING TRICKY QUESTIONS TO THE CHILDREN OF MY SCIENTIST FRIENDS.

Feynman recounted another good one upperclassmen would use on freshmen physics students: When you look at words in a mirror, how come they're reversed left to right but not top to bottom? What's special about the horizontal axis?

LCA, from Page 1

lice and other parts of the MIT administration are conferring on issues particular to these recently reported assaults."

The police bulletin included information on resources for victims of a sexual assault via the Violence Prevention and Response Team at Community Wellness in MIT Medical. It also mentions that the MIT Police take special considerations for the investigations of sexual assaults and can help survivors with anonymous reporting as well as contact local police, additional resources, and the district attorney's office.

At press time, the Lambda Chi Alpha President Nicholas A. Davis '14, had not replied to an email inquiry. Assistant Director of FSILGs and Primary Advisor for Fraternities Catherine Sohor did not have any additional information on the situation.

MIT Police urges all students to call 617-253-1212 or dial 100 from any on-campus phone at anytime if they feel unsafe on campus or in off-campus living groups.

—Stan Gill

EMILY KELLISON-LINN—THE TECH

A Student Art Association representative talks to potential customers at the SAA's ceramic sale, held on Monday in Lobby 10. The sale featured ceramic sculptures and vessels by MIT students, faculty, and staff. The MIT Glass Lab also held a sale in Lobby 10. Both sales continue today.

Barker renovation is the beginning

MIT Libraries conducted surveys to tailor library facilities

By Isabella Wei
STAFF REPORTER

If you think the Barker Reading Room is the last you'll see of changes in the MIT Libraries, think again. The renovation of the Barker Reading Room is the first step of a longer process to better serve students' study needs.

By the end of IAP, the well-loved Barker reading room will be a transformed space. Shawmut Construction, under the direction of Dick O'Connell, project superintendent, along with Joe Collins and Jennifer Combs from MIT Facilities, and Steve Gass, associate director for libraries' research and instructional services, is renovating the study area by adding four new sources of lighting, improving the sound masking system, and repainting the grilles and dome.

The new reading room will have a ring of LED lights about halfway down from the dome, a series of fluorescent lights behind fogged acrylic panels, and 16 recessed lights just under the dome, and the newly restored oculus. In restoring the skylight of the dome, Shawmut has kept the original steelwork but replicated the small glass blocks that allow light to stream through. They are also adding a sloped protective lid on the dome intended to deter hackers and prevent leaks.

In addition to improving the lighting, Shawmut is upgrading the sound masking system by installing advanced acoustic panels. Another key part of the renovation is the construction of bathrooms right outside the reading room. The furniture in the reading room will remain the same. Upon its reopening in February 2013, the reading room will become a 24-hour accessible space with a seating capacity of about 120 students.

Barker is the beginning of the reinvention of libraries at MIT, according to Ann Wolpert, director of libraries.

The administration of the libraries has begun to construct a set of new long-term aspirations. They hope to take advantage of under-utilized spaces, such as the courtyard by Hayden Library, in an effort to encourage a collaborative and digital learning environment. According to Wolpert, "the vision is, fundamentally, to continue to take an amazing asset that MIT has built over the last 150 years ... building them into the curriculum, helping students understand how to use these resources so they can continue to be successful once they leave MIT and finding the kinds of spaces that students need to study and work."

After conducting several surveys and even counting the number of students in each library space at any time, the Libraries have a better idea of how to tailor library hours and facilities to the needs of students.

> **Barker is the beginning of the reinvention of libraries at MIT**

"If it looks like at the end of the day we're shooing a lot of students out the door, then that was how we tried to respond," said Janet Conrad, chair of the faculty committee on library systems. The libraries are also responding to graduate students' need for spaces to write their theses — somewhere separate from the lab, where they can easily ask for help finding material. A key part of the libraries' vision is to make the libraries a place where students can either study 'alone together' or work on group projects. Another need the libraries are responding to is the demand for group work space. Following the popularity of the Barker group study spaces, the libraries hope to develop more similar spaces.

In developing a vision for the MIT libraries, the administration took into consideration libraries at several other colleges, including Georgia Tech, Duke, Johns Hopkins, Columbia, North Carolina State, and Stanford. In comparison, libraries on other campuses provide more seating, more group study rooms, more digital learning classrooms, nearby food and coffee venues, and longer hours. A few other libraries also have more advanced technology, with elaborate A/V equipment and automatic check-out systems.

Though MIT libraries are lacking in certain areas, they lead in electronic collections, an initiative that began before any other library realized the importance of the shift from tangible collections to electronic ones, according to Wolpert. The MIT libraries, recognizing that students and faculty are constantly traveling, have dedicated strong efforts to building a world-class electronic collection. In 2011, 90 percent of the libraries' acquisitions budget consisted of electronic resources.

Currently the MIT libraries provide seating for about 13 percent of the student population if every student were to try to sit in the library. The remaining space is allocated to collections, staff, service desks, and instructional spaces. As the libraries continue to improve their ability to meet students' needs, next steps might even include a system for tracking the availability of specific study spaces, Wolpert said.

Reeves hopes MIT will purchase Central Square properties

Real estate valued at over $15 mil. up for sale, MITIMCo declined to comment on MIT interest

Central, from Page 1

include both residential and commercially zoned parcels indicating that a variety of development options are possible.

Fennell said there has been "a lot of interest" in the sale, but declined to provide further details in regards to potential buyers or future uses for the land. Robert Griffin, the Cushman & Wakefield realtor handling the sale, declined to comment.

According to Cambridge City Councilor Kenneth Reeves, the Fennel properties constitute "the largest number of parcels to be sold in Central Square in a long time." In an earlier statement to *The Cambridge Chronicle*, Reeves expressed his desire that MIT purchase the land. Reeves claims that this statement was based upon his belief that "it would be good for Central Square if the buyer understands the complexity and the beauty of the square." According to Reeves, MIT fits this description as he feels that the Institute's cooperation with the Cambridge city government over the last two years has been "very respectful" of local government and its wishes for the area's development.

Reeves' only reservation in relation to MIT's potential purchase of the properties is his feeling that the Institute is "very decentralized in deciding what to do with its large property holdings."

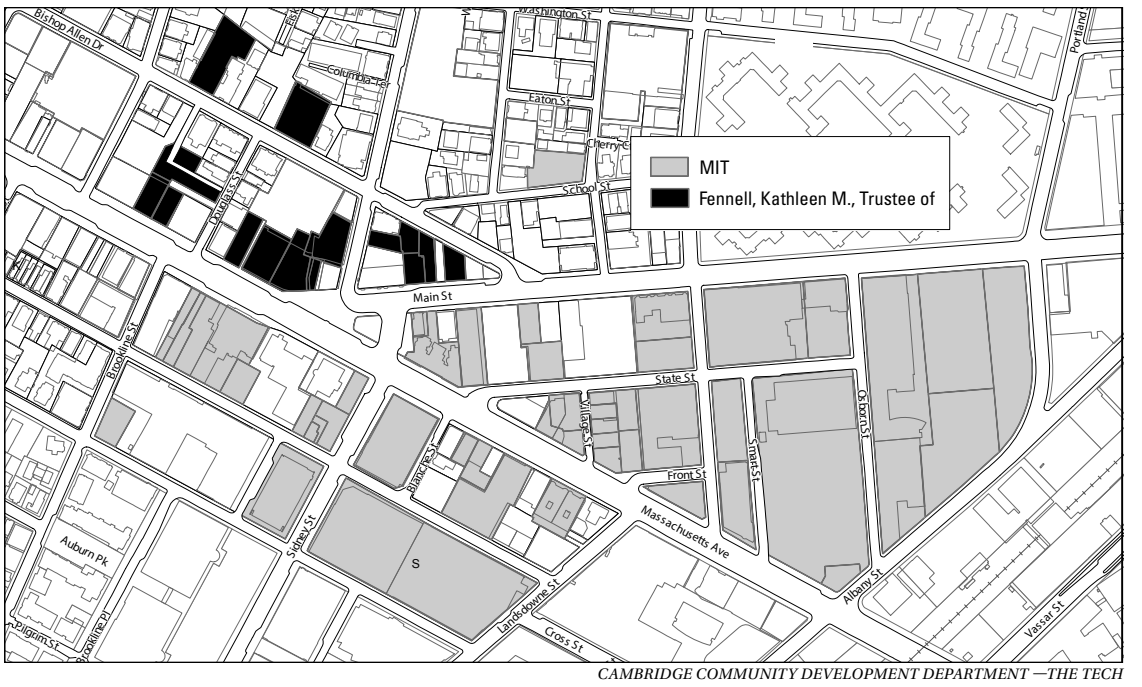
"It's not clear if the president, or the faculty, or MITIMCo [the Institute's investment management company] are calling the shots or if they are even all moving in the same direction," said Reeves. "I think this is a problem President Reif will soon discover if he has not already."

In response to an email requesting clarification on MIT's real estate acquisition strategy, Martin A. Schmidt PhD '88, associate provost, responded that MITIMCo "monitors the local market. When property in Cambridge near campus comes on the market they bring it to the attention of the senior leadership of MIT. If the property is of strategic interest to MIT for academic purposes, then the senior leadership, through consultation with the Executive Committee of the Corporation, will decide whether to pursue a purchase. If the academic leadership is not interested, MITIMCo will evaluate the property as an investment for the endowment, and the decision for that purchase resides with MITIMCo."

Steve Marsh, managing director of real estate at MITIMCo, declined to comment on MIT's interest in the Central Square properties, in relation to either academic or commercial use, saying "public comments about possible transactions can cause unintended consequences for MIT as well as for other participants in the real estate market."

While the details surrounding the sale are still unavailable, the Cambridge city government appears optimistic that the sale presents a unique opportunity for the development and enhancement of the Central Square area. This corresponds with a great deal of discussion surrounding Central Square as part of the K2C2 planning study which addresses the long term development of both Kendall and Central Square.

At a meeting of the Cambridge City Planning Board held in City Hall on Tuesday evening, one member of the board stated that with Quest "moving out of town, this creates the potential for livening up the [Central] Square real soon." Time will tell what role, if any, MIT might play in this process.



CAMBRIDGE COMMUNITY DEVELOPMENT DEPARTMENT —THE TECH

Parcels of land in Central Square, currently owned by Kathy Fennell and the Fennell Realty Trust (in black), valued at over $15 million, are up for sale. Real estate currently owned by MIT is shown in gray.

2.009 presents final projects on "Outdoors"

Harvesters, bike extras, & cookware

2.009, from Page 1

bicycle commuters. The Blue Team designed StormShield, an inflatable cover to serve as rain protection for cyclists. The Green Team produced a handlebar system that turns GPS directions from a rider's phone into vibration signals in the hand grips. Two products were also targeted to campers. The Orange Team created Ferno, a lightweight propane stove. The Red Team used a chemical reaction in Heatware, their design for a self-heating pot for flameless outdoor cooking.

The Yellow Team had a particularly large prototype for a medium-range spinach harvester, Sproutacus. The Silver Team also targeted a relatively niche market with a dolly specifically designed for moving beer kegs down stairs. The Purple Team's SkyBeacon deploys a helium-filled balloon to serve as a locating aid for distressed ships. The last group to present, the Pink Team, demonstrated HERC, their device for trash receptacle cleaning.

Most 2.009 students valued their experience even with the intense time commitment required. "I learned how to work really, really hard to pursue something I'm passion about," said Yellow Team member Aaron M. Fittery '13. "We worked 12 hours most days, and I had a lot of fun with my teammates."

"It was really energizing to get on stage," said John W. Reynolds '13, a presenter for the Silver Team, adding that the most rewarding part of the class was seeing beer delivery men use their prototype.

Madeline Salazar '13 described her experience presenting for the Purple Team as "nerve-wracking," but said, "The unique part [of 2.009] is that we're still undergraduate students without our degree, but MIT has already prepared us to make a product as mechanical engineers."

"We try to teach a bunch of skills," said Wallace, "but ultimately we want students to have an attitude that they can do more than they think. We have a lot of fun while doing our work."

Solution to Crossword

from page 13

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

Why have printed annual reports not been issued since 2005?

President's part of the annual report missing since 2004, no explanation given for the delay

By John A. Hawkinson
STAFF REPORTER

Like any major company, every year MIT produces a detailed annual report summarizing the past year's work, accomplishments, and aspirations, with a detailed section from every department, lab, center, school, or other unit — or at least that's the way it's supposed to work.

Called the *Report to the President* since 1983, and previously the *Report of the President*, MIT's annual reports have recently run over one thousand pages, and provide a narrative from nearly every administrator of something at MIT, and are a source for statistics and numbers about MIT that are comparable from year-to-year.

Printed annual reports have not been issued since the 2005 report, according to Kimberly D. Mancino of the Reference Publications Office, because the office is still waiting for critical reports to come in — such as the section of the reports penned by MIT's presidents.

"Report of the President"

"Getting them in years late is the same as not getting them in," said Richard L. Schmalensee '65, professor of management and former dean of the Sloan School of Management.

The "Report of the President" section is missing for the years 2004–2012: one year of President Charles M. Vest, one year of overlap, and seven years of President Susan J. Hockfield.

(The 2004-2005 academic year overlapped both presidents, and in lieu of a report from either Vest and Hockfield, the 2005 report contained a summary attributed to the MIT News Office.)

In the "Report of the President" section, the MIT president discusses his or her priorities for the Institute, and what is being done to achieve the Institute's goals at a strategic level. The section typically offers a small history lesson and some narrative associated with the management of the Institute. It helps to explain what the President did and why, as well as how.

Running late

The publications office makes electronic versions of the individual reports available at *http://web.mit.edu/annualreports/* while waiting for all the reports to arrive.

Mancino said that the 2011 report was running about six months late, and that the piecemeal electronic version should have been available in May. Most of 2011 has been submitted, but it has not been completely finalized, she said.

In addition to missing the sections authored by President Hockfield from 2006 onwards, the report also lacks the report of the MIT Corporation from 2009 onwards. Both categories of report are the responsibility of Kirk D. Kolenbrander, who both served as chief of staff to President Hockfield and is vice president for Institute affairs and secretary of the Corporation.

"We are workin' on it," Kolenbrander said. But asked if he could account for the delay, he said "Nope."

"I don't think it's the hugest thing in the world," Schmalensee said. "I just think it's good practice" to get the report in.

But he said that he did not write an annual report when he was dean. (An annual report from the Sloan School is present for his last year as dean, 2007; it was not signed by him, though some earlier years were.)

Some MIT offices use their annual reports to contextualize their relationship with the public and explain their activities. For instance, the Office of the General Counsel, MIT's lawyers, included the following paragraph in several of their annual reports:

"*We often find that news reporting and public commentary about MIT litigation is incomplete and misinformed, sometimes wildly so. Nonetheless, we almost never respond to news inquiries and we usually don't correct misstatements because we are governed by facts and law, which we advocate in court, not in newspaper headlines. Also, much of our litigation and pre-litigation activity involves inherently confidential information. Our success in this part of our work is measured in part by how little publicity it generates.*"

President Hockfield did not respond to requests for comment, and the MIT News Office declined to comment on MIT's annual reports.

JESSICA L. WASS—THE TECH

Students dance in Dance Troupe's semester concert on Saturday evening. Numerous groups of students showcased their dancing in the five shows that took place over the last weekend.

WellesleyX and GeorgetownX now partner with edX

Wellesley and Georgetown to offer courses next fall; evaluating edX, Coursera, & Udacity

edX, from Page 1

also aware of other platforms that offer free massive open online courses, often comparing them with edX. User lucaspottersky praised edX's forum UI above Coursera's, for example, while nagalman says that "after 6.00x, I am going back to Udacity." The artificial intelligence class received feedback from contik32. "If you have problems developing proper solutions providing proper diagnostics output, I suggest you to consult your colleagues at Princeton University (CS dept) who managed to provide excellent diagnostics for their grader at Coursera."

The first edX course to finish was CS169.1x, the first half of BerkeleyX's Software as a Service class, which is taught by Armando Fox '90 and David Patterson. The edX course attracted about 30,000 registrants, but only about 3,000 students stayed and passed, according to Fox, who says that 10 percent is a common passing rate for MOOCs. Those who passed CS169.1x have received free certificates from edX. Their performance was comparable to that of Berkeley students, Fox said.

Before Berkeley joined edX, CS169.1 was offered three times on Coursera, with a class size of between 20,000 and 50,000 in each iteration. Coursera, which launched its first course six months before edX, boasts 33 university partners, over two million registered students, and 208 courses representing a much wider range of topics than edX. But Berkeley chose to join edX, which "reflects the fact that edX and UC Berkeley have similar values," such as a commitment to an open platform, Fox wrote in an email to *The Tech*. "The founders of Coursera and Udacity are close colleagues of ours and we wish them success, but as an institution we felt the alignment of goals was better with edX, and the risk of stumbling (over 90 percent of startups end up exiting differently than expected) was lower," he added. "I think it will be a very successful collaboration."

One surprise from teaching his class online was the extent to which developing the online content enhanced the on-campus course. Berkeley students gave higher evaluations to the course after the instructors introduced reorganized lectures and wrote automatic graders of student code, which were necessary for the MOOC. The online format also allows instructors to collect data about student performance, which Fox plans to use to "polish and calibrate the questions for on-campus students."

Berkeley's residential Software as a Service course included both material on the edX platform and elements so far only possible in an on-campus course, like a team design project in which students work with customers from outside the university. Fox believes that this combination will be "a major use case at Berkeley and elsewhere for MOOC technologies" in the future. "At the moment it's one that the MOOC startups do not seem to support."

But Fox has not yet converted to the "flipped classroom," though he is considering experimenting with it. Often touted as the future of education on college campuses, the flipped classroom model uses class time for discussions or problem-solving, leaving the introduction of new concepts (traditionally the domain of lectures) to online videos or reading to be completed outside of class. "I've had colleagues at Berkeley and elsewhere who tried it. Of the three most recent, one was a disaster, one was an unqualified success, and one turned out only OK." Fox thinks that the effectiveness of the flipped classroom depends on the instructor and the students. One possibility for the future Fox suggested was offering both traditional and flipped formats simultaneously and letting students pick which class they wanted to take.

Perhaps one reason Fox continues to teach MOOCs is the impact they can have on students' futures. He estimated that online versions of Software as a Service have changed "tens or hundreds" of lives for the better. "[They] now have better career opportunities by getting this instruction that would otherwise be unavailable to them."

Solution to Techdoku I

from page 14

6	5	1	3	4	2
4	3	5	1	2	6
5	4	6	2	3	1
2	1	3	5	6	4
3	2	4	6	1	5
1	6	2	4	5	3

Solution to Sudoku I

from page 14

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

Solution to Techdoku II

from page 15

3	2	4	5	1	6
2	1	3	4	6	5
6	5	1	2	4	3
1	6	2	3	5	4
4	3	5	6	2	1
5	4	6	1	3	2

Solution to Sudoku II

from page 15

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

Manziel makes history with Heisman honor

Texas A&M quarterback beats Notre Dame's Manti Te'o to win Heisman Trophy

By Nicolas Lopez

Johnny Manziel, a freshman at Texas A&M, is breaking all precedents during his first season playing college football. The quarterback is the first freshman in history to be awarded the Heisman Trophy, college football's highest individual honor.

Manziel received 474 first place votes and won easily over a distant second place Manti Te'o out of Notre Dame, who received 321 first place votes. Te'o, a linebacker, was also looking to make history, aiming to be the first defensive player to ever win the award. However, Manziel's incredible season ended any hope that Te'o might have had of winning. Manziel threw for 3,419 yards and 24 touchdowns, and rushed for an additional 1,181 yards and 19 touchdowns. Te'o has had a remarkable season in his own right, spearheading the Fighting Irish's defense and helping them reach the top ranking in the BCS polls; but Johnny Manziel's amazing statistical accomplishments proved to be too much for the voters to pass up. He broke 2010 Heisman winner and current Carolina Panthers QB Cam Newton's SEC conference record with 4,600 total yards and became only the 5th player ever to have thrown for 3,000+ yards and rushed for 1,000+ more in a single season.

The quarterback is the first freshman in history to be awarded the Heisman Trophy.

What makes his win so incredible is that very few people saw this kid as the future best talent in college football when he was recruited out of Tivy High School in Kerrville, Texas. Arriving at Texas A&M, Manziel had to compete against two others to claim the starting quarterback job vacated by current Miami Dolphins QB Ryan Tannehill. Interestingly enough, Manziel was named as the backup QB in favor of Jameil Showers at the end of spring training. However, Manziel began working extensively with a private quarterback coach and was named the starter by the start of the season, a move the coaching staff has no reason to regret.

As a team, Texas A&M is currently ranked 9th in the BCS standings with a record of 10-2. Against ranked opponents, the Aggies are 3-2, however one of those wins comes against Alabama, who was the number one ranked team at the time of the loss, and to this day the loss to the Aggies remains Alabama's only loss on an otherwise unblemished season. Texas A&M will be playing against 11th ranked Oklahoma on January 4th in the Cotton Bowl, which will be Manziel's first chance to confirm in front of the entire nation why he was chosen as the top collegiate football player. Manti Te'o will look to prove the voters wrong when 1st ranked Notre Dame takes on 2nd ranked Alabama in the BCS National Championship game January 7th.

Cacti galore at Holiday Vendor Fair in the student center

EMILY KELLISON-LINN—THE TECH

Amita Gupta '15 checks out the cacti sold by local artisan Dave Holmstead at the Holiday Vendor Fair last Tuesday. The annual event, sponsored by the Campus Activities Complex, featured several local vendors. Soaps, necklace charms, and scarves among other items were sold in the Student Center throughout the day.