



HO YIN AU

A memorial was placed on the Harvard Bridge for Joe Gage, a man who jumped into the Charles River in the early morning of New Year's Day. A search was conducted by the Cambridge Fire Department, Boston Fire Department, and the State Police, but his body has not been found.

Man jumps off Harvard Bridge, no body found

The search for a man who jumped off the Harvard Bridge in the early hours of Tuesday, Jan. 1 has been suspended due to river conditions. A memorial on the bridge identifies the man as Joe Gage, a 32-year-old Boston resident. According to tweets from the Boston Fire Department (@BostonFire), two men were crossing the bridge around 3 a.m. on Jan. 1. About halfway across, they hailed a cab, and as one man walked toward the vehicle, Gage jumped over the railing into the Charles River. According to the

District Attorney's office, witnesses reported that he jumped intentionally.

Authorities closed the bridge to search the river with the hope of finding Gage alive. Divers from the Boston Fire Department, the Cambridge Fire Department, and the State Police searched the partially frozen water for eight hours. The Boston and Cambridge Fire Departments suspended their search at sunrise, while State Police divers continued the search into the early afternoon. Divers had zero visibility in the 7.5-foot-deep

water and searched in a grid pattern by "feeling along the river bottom," according to a tweet from the Boston Fire Department. After Gage was in the water for two hours and 15 minutes, Boston Fire tweeted that the search had become a recovery operation, meaning they did not anticipate a rescue. Memorial services for Gage were held in Newmarket, New Hampshire on Sunday, Jan. 6. State Police will continue to investigate the incident.

—Jaya Narain

Dean Hastings steps down

Yesterday evening, Chancellor Eric Grimson PhD '80 announced that Dean Daniel E. Hastings PhD '80 would be stepping down as dean of undergraduate education effective July 1, 2013. According to Grimson's email to the entire MIT community, Hastings will be returning to his faculty position in Aero/Astro (Course 16) and Engineering Systems Division (ESD) after taking a year off for a sabbatical. Since being appointed dean of undergraduate education in 2006, Hastings has focused on giving students more international opportunities and helped modernize several aspects of students' education.

Since 2006, MISTI, MIT's international internship program, has expanded from sending 300 to 400 students abroad. On his legacy,

Hastings told *MIT News* that he is most proud of his work in expanding global education, and introducing online grading and course evaluations.

Hastings first joined MIT's Aero/Astro Department in 1985 as an assistant professor, before becoming associate professor in 1988 and finally advancing to full professor in 1993. Since 2000, he has held various positions in ESD, including director of the technology and policy program, associate director, and director. He is currently the Cecil and Ida Green education professor of Engineering Systems.

According to Grimson, a search committee will be formed in the coming weeks to find the next dean.

—Anthony Yu



HO YIN AU

Hackers decorated Lobby 7 with a dragon and a Mayan calendar on Dec. 17, 2012. MIT's finals week ended on the same day as the "End of the World," according to interpretations of the Mayan calendar.

First humanities classes on edX

Educators struggle to scale writing-intensive courses

By Leon Lin
STAFF REPORTER

"In what sense, if any, did you deserve to be admitted to Harvard College?"

That's a question nearly 900 Harvard undergraduates saw on their final exam in 2008 for a class called "Justice." (Students had to pick 3 questions to answer out of 7.) In their responses, they were presumably not expected to just give an overview of their high school achievements, but rather to make a careful argument in light of the class discussions about fairness, distributive justice, and affirmative action — that is, to demonstrate that they had learned something about ethical reasoning, the general education requirement that Justice fulfills.

This spring, perhaps tens of thousands of certificate-seeking students worldwide will also be tested to see if they've picked up anything from JusticeX, the corresponding upcoming course

on edX, the online learning initiative founded by Harvard and MIT.

To be sure, the edX students won't be asked the same question on their final — the course is open to anyone with an Internet connection, not just Harvard admittees. But that's just the rub: edX just doesn't have the resources to grade written responses in a free course that attracts a hundred times as many students as even one of the most popular courses at Harvard.

It's not an unreasonable estimate, given that the two HarvardX courses that started in the fall attracted nearly 200,000 registrants total, according to the *Harvard Gazette*. Besides, Justice has already proved to be enormously popular on the Internet. The class's recorded 2005 lectures have received millions of views on Youtube, no doubt not only because of the accessible subject matter — Is torture ever justified?

edX, Page 10

650 accepted into MIT Class of 2017

9.9 percent of early action applicants were accepted on Dec. 15

By Stan Gill
NEWS EDITOR

Over the winter break, 650 students received MIT admissions tubes filled with confetti in the mail. These new students, accepted into MIT's undergraduate Class of 2017, were selected from a total of 6,541 early action applicants. Another 4,397 applicants were deferred to regular action while the remaining 1,494 were denied. (MIT does not admit international students in early action.) Decisions were released online on Dec. 15.

"We are as excited about these admitted students as we ever have been about a group of students," wrote Dean of Admissions Stuart Schmill '86 in an email to *The Tech* on Monday. "They are exceptional, and I know our current students will enjoy having them as classmates in the years to come."

The early action deadline of Nov. 1 came mere days after Hurricane Sandy hit the east coast. Director of Admissions Matthew L. McGann '00 released a statement on the admissions blogs stating that the admissions office would be flexible with applications received after the deadline from those affected by the storm. In the end, Schmill said, all of the students were able to get their applications with plenty of time for the admissions office to review them thoroughly.

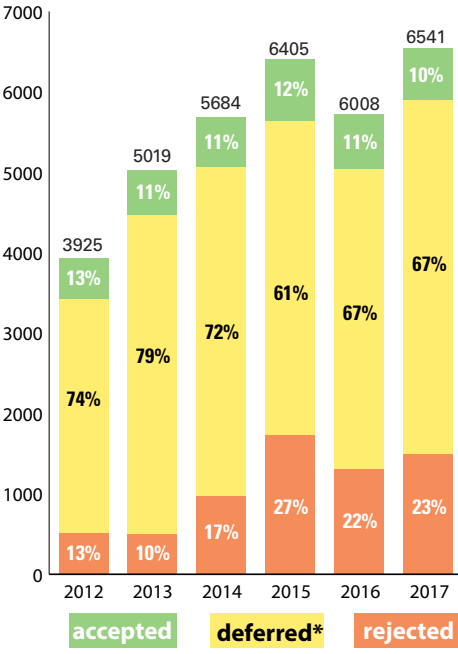
"Given that our applicants come from all over the world, there can certainly be circumstances that affect students in some place or other," Schmill wrote.

The deadline for regular admission just passed on Jan. 1, and the admissions office has no report yet on the final number of applications, according to Schmill.

Michelle E. Szucs contributed reporting to this article.

MIT Early Action Trends

(Class of 2012-2017)



*includes incomplete and withdrawn applications

IN SHORT

New Jersey's Normandy Real Estate Partners bought many buildings along Mass. Ave. for \$32 million, and plans to turn the property into housing and restaurants.

The IAP UROP deadline is Thursday, 5 p.m.

Forbes Café in Stata will reopen on Jan. 14, 2013.

LaVerde's IAP hours run from 7 a.m. to 11 p.m.

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

EGG DONOR AD OFFENSIVE?

The "Genius Asian Egg Donor" advertisement is potentially unsafe.
OPINION, p. 4

WOMEN'S BASKETBALL WINS

Women Engineers beat Johnson & Wales 54-43. **SPORTS, p. 12**

OUR NATION'S GUN PROBLEM

America is oversaturated with guns and ammunition. **OPINION, p. 4**



FROM CAVE ART TO THE INTERNET

100 Ideas that Changed Art spans the history of art in manageable chunks.
ARTS, p. 6

ENGINEERS BEAT WHEATON LYONS

Men's basketball dominated Wheaton on Saturday 84-47.
SPORTS, p. 12

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Expert to testify on deviance of NYPD officer

By Benjamin Weiser
THE NEW YORK TIMES

NEW YORK — A prominent forensic psychiatrist who has consulted on behalf of local and federal prosecutors about such notorious serial killers as Jeffrey L. Dahmer and Theodore Kaczynski is now involved in the case of a New York police officer charged with plotting to kidnap, rape, cook, and eat women, a new court filing shows.

This time, however, he will be assisting the defense.

Lawyers for the officer, Gilberto Valle, said in a court filing Monday that they intended to introduce the testimony of Dr. Park Dietz, of Newport Beach, Calif., who they said had interviewed and “conducted an extensive psychiatric evaluation of Mr. Valle.”

Dietz concluded that Valle was not mentally ill, the lawyers said in a letter to prosecutors that was filed in U.S. District Court in Manhattan.

But Dietz did find that Valle suffered from a deviancy that involved fantasies of sexual sadism, in which he derived excitement from the

imagined psychological or physical suffering of female victims.

The lawyers also noted in their letter that about three-quarters of Dietz’s work in criminal cases has been for federal, state and other law enforcement authorities.

“Dr. Dietz’s objective evaluation completely supports Mr. Valle’s innocence,” one of his lawyers, Julia L. Gatto, a federal public defender, said Monday. “As has been clear from the start, there is no crime here, only our client’s words. Dr. Dietz will help the jury put those words in context.”

Valle, who has been suspended by the Police Department and is being held pending a trial in two weeks, has been accused of plotting his crimes through emails and instant messages he exchanged with other conspirators. A second man was arrested last week, and was ordered detained on Monday.

Valle’s lawyers have argued that their client’s communications, disturbing as they were, were merely dark fantasies that he exhibited on Internet websites used by thousands of people. The lawyers said Dietz would testify that Valle’s “Internet

communications and related actions in this case are consistent with the modus operandi of fantasy role-play and storytelling engaged in by people” afflicted with his disorder.

Prosecutors had no comment on the filing. The government has contended in court papers that Valle’s conduct “went beyond mere talk or fantasy on the Internet,” and that he took “concrete steps” to further his plans, including the surveillance of a woman he had agreed to kidnap.

In one message, a criminal complaint charges, Valle wrote of one potential victim: “I was thinking of tying her body onto some kind of apparatus ... cook her over a low heat, keep her alive as long as possible.”

Dietz declined to comment on the Valle case.

In 2005, a Texas appeals court overturned the conviction of Andrea P. Yates, charged in the drowning deaths of her five children. Dietz, a prosecution witness, referred to a television episode of “Law & Order” shortly before the crime that depicted a mother drowning her children and being found insane. But no such show had been broadcast.

It’s official: 2012 was the hottest year in US on record

By Justin Gillis
THE NEW YORK TIMES

The numbers are in: 2012, the year of a surreal March heat wave, a severe drought in the corn belt and a massive storm that caused broad devastation in the mid-Atlantic states, turns out to have been the hottest year recorded in the contiguous United States.

How hot was it? The temperature differences between years are usually measured in fractions of a degree, but last year’s 55.3 degree average demolished the previous record, set in 1998, by a full degree Fahrenheit.

If that does not sound sufficiently impressive, consider that 34,008 daily high records were set at U.S. weather stations, compared with only 6,664 record lows, according to a count maintained by Weather Channel meteorologist Guy Walton, using federal temperature records.

That ratio, which was roughly in balance as recently as the 1970s, has been out of whack for decades as the

country has warmed, but never by as much as it was last year.

“The heat was remarkable,” said Jake Crouch, a scientist with the National Climatic Data Center in Asheville, N.C., which released the official climate compilation Tuesday. “It was prolonged. That we beat the record by one degree is quite a big deal.”

Scientists said that natural variability almost certainly played a role in last year’s extreme heat and drought. But many of them expressed doubt that such a striking record would have been set without the backdrop of global warming caused by the human release of greenhouse gases. And they warned that 2012 was likely a foretaste of things to come, as continuing warming makes heat extremes more likely.

Even so, the last year’s U.S. record is not expected to translate into a global temperature record when figures are released in coming weeks. The year featured a La Nina weather

pattern, which tends to cool the global climate overall, and scientists expect it to be the world’s eighth- or ninth-warmest year on record.

Assuming that prediction holds up, it will mean that the 10 warmest years on record all fell within the past 15 years, a measure of how much the planet has warmed. Nobody who is 28 has lived through a month of global temperatures that fell below the 20th-century average, because the last such month was February 1985.

Last year’s weather in the United States began with an unusually warm winter, with relatively little snow across much of the country, followed by a March that was so hot that trees burst into bloom and swimming pools opened early. The soil dried out in the March heat, helping to set the stage for a drought that peaked during the warmest July on record.

The drought engulfed 61 percent of the nation, killed corn and soybean crops and sent prices spiraling.

In fending off critics, Obama points to Hagel as war hero

By Mark Landler
THE NEW YORK TIMES

WASHINGTON — In his effusive endorsement of Chuck Hagel as his choice for secretary of defense on Monday, President Barack Obama set in motion a White House campaign that officials predict will overcome weeks of accusations that the Republican former senator from Nebraska is anti-Israel, anti-gay and soft on Iran.

The president extolled Hagel’s record as a decorated veteran of the Vietnam War, saying that he was “the leader that our troops deserve.” He described how Hagel once saved his brother, who was fighting alongside him, after he was wounded by a mine.

“With Chuck, our troops will always know, just as Sergeant Hagel was there for his own brother, Secretary Hagel will be there for you,” said Obama, who was flanked by Hagel and the departing defense secretary,

Leon E. Panetta, at the White House ceremony.

“Maybe most importantly,” the president continued, “Chuck knows that war is not an abstraction. He understands that sending young Americans to fight and bleed in the dirt and mud, that’s something we do only when it’s absolutely necessary.”

The president’s message seemed intended in particular for the conservative critics of Hagel, including Sen. John McCain of Arizona, who have warned that he will face a bruising confirmation battle. White House officials said that Republicans, whatever their policy disagreements, would find it difficult to vote against an acknowledged war hero.

Obama’s announcement was part of a carefully calibrated White House strategy that has included reaching out to pro-Israel lobbying groups, with a goal of wearing down the resistance to Hagel that erupted as soon as he emerged last month as

a front-runner for the Pentagon post.

Conservative and Jewish groups reiterated their concerns Monday that Hagel has opposed sanctions on Iran, failed to support Israel, and has advocated engaging with Hamas and Hezbollah. They want him to explain why he once referred to pro-Israel lobbying groups as “the Jewish lobby,” a phrase they said was hurtful to Jews.

Still, it was not clear how hard they will fight to block Hagel, now that the president has nominated him. “We’re not in the opposition camp, we’re in the concerned camp,” said David Harris, the executive director of the American Jewish Committee, a centrist Jewish group. “We’re going to count on the Senate to examine, as it must, key issues of concern.”

If confirmed, Obama said, Hagel, 66, would be the first former enlisted man and the first Vietnam veteran to serve as defense secretary, and one of the few ever wounded in war.

Fuel leak is latest setback for Boeing 787

Boeing’s newest and most sophisticated jet, the 787 Dreamliner, suffered a new mishap on Tuesday when a fuel leak forced an aircraft to return to its gate minutes before taking off from Boston, a day after an electrical fire broke out on another plane.

The events were the latest in a series of problems with the 787, which entered commercial service in November 2011 and has been hit by technical and electric glitches since then. Boeing delivered 46 planes last year, more than any analyst had predicted, and has outlined ambitious plans to double its production rate to 10 planes a month by the end of this year.

Much rides on the success of the 787 for Boeing, which expects to sell 5,000 of the planes in the next 20 years. The basic model has a list price of \$206.8 million but early customers typically receive deep discounts to make up for the production delays and teething problems. All this means it could be years before Boeing starts recouping its investment costs and turn a profit on the planes.

The 787 makes extensive use of new technology, including a bigger reliance on electrical systems, and is built mostly out of lightweight carbon composite materials. While the problems so far do not point to serious design problems with the airplane, they represent an embarrassment to Boeing’s manufacturing ability.

The flight with 178 passengers and 11 crew members, initially scheduled to take off at noon, eventually left Boston at 3:47 p.m.

—Jad Mouawad, *The New York Times*

Growth of health spending stays low

WASHINGTON — National health spending climbed to \$2.7 trillion in 2011, or an average of \$8,700 for every person in the country, but as a share of the economy, it remained stable for the third consecutive year, the Obama administration said Monday.

The rate of increase in health spending, 3.9 percent in 2011, was the same as in 2009 and 2010 — the lowest annual rates recorded in the 52 years the government has been collecting such data.

Federal officials could not say for sure whether the low growth in health spending represented the start of a trend or reflected the continuing effects of the recession, which crimped the economy from December 2007 to June 2009.

Kathleen Sebelius, the secretary of health and human services, said “the statistics show how the Affordable Care Act is already making a difference,” saving money for consumers. But a report issued by the Centers for Medicare and Medicaid Services, in her department, said the law had so far had “no discernible impact” on overall health spending.

The report did not forecast the effects of the new health care law on future spending. Some provisions of the law, including subsidized insurance for millions of Americans, could increase spending, officials said. But the law also trims Medicare payments to many health care providers and authorizes experiments to slow the growth of health spending.

—Robert Pear, *The New York Times*

Theater shooting suspect set trap to divert police, FBI says

CENTENNIAL, Colo. — If all had gone according to James E. Holmes’ plan, someone would have tripped the labyrinthine nest of explosives he had woven around his apartment, luring the police from the Aurora movie theater where he is accused of opening fire in July, an FBI agent testified Tuesday.

When the police entered the apartment after the shooting, they found a virtual death trap. A trip wire skirted five feet from the door to a thermos filled with glycerin, which tilted precariously over a pan containing another substance that could have caught fire, said Garrett Gumbinner, a bomb technician.

Three jars of homemade napalm had been placed around the apartment. Firework shells filled with smokeless powder and gasoline littered the floor. The carpet was drenched with gasoline and oil, the agent testified.

“He said he had rigged his apartment to explode or catch fire in order to send resources to the apartment,” Gumbinner said.

According to testimony Tuesday, Holmes told the police he had timed his computer to blare music, hoping to draw someone inside his home, thereby detonating the explosives.

On Tuesday, Daniel King, one of Holmes’ public defenders, intimated yet again that he would pursue an insanity defense.

—Dan Frosch, *The New York Times*

British soldier killed by Afghan soldier

KABUL, Afghanistan — A British soldier who was helping to build new quarters for the Afghan National Army at a small base in southern Afghanistan was fatally shot by an Afghan soldier in the first insider attack of 2013, military officials said on Tuesday.

The attacker, who struck on Monday evening, also shot and wounded six other British soldiers in the engineering regiment, three of them seriously, before being killed, Afghan and British officials said.

During the attack, which occurred at Camp Hazrat, a joint patrol base in the Nahr-e-Seraj District of Helmand province, several Afghan soldiers were also shot at but were not wounded, said Maj. Gen. Sayed Maluk, the commanding general of the Afghan army’s 215 Corps, in a statement to the British Forces Broadcasting Service, an arm of the British Defense Ministry.

Maluk said the Afghan army was doing everything it could to prevent such attacks. Until 2011, insider attacks, also known as “green on blue” attacks, were a relatively minor problem for the Western military forces in Afghanistan. But last year, 62 international troops and civilian contractors died in attacks by Afghan forces. Two additional attacks are still under investigation.

Many in the military see the escalation as a game changer that requires Western troops to stay at arm’s length from the Afghans they are supposed to be training and mentoring.

—Alissa J. Rubin and Taimoor Shah, *The New York Times*

WORLD&NATION WORLD&NATION WORLD&NATION WORLD&NATION WORLD

Egg donor ad printed in November is inappropriate

A similar egg donor advertisement printed 1999 elicited a similar response

Thakor, from Page 4

“smart,” hence face no real oppressions in the U.S, masks real issues affecting Asian Americans and Asian immigrants. The ad’s obnoxious proliferation of this harmful stereotype does not belong in an MIT student newspaper.

As we were reflecting on this ad, we found a similar egg donor advertisement printed in *The Tech* in 1999 that received a response very similar to our own. It is shameful that we as an educational community continue to allow the posting of ignorant advertisements like these, over 10 years later.

Furthermore, even the most cursory Internet sleuthing shows that this ad may not be quite what it seems. The website *www.eggdonorneeded.com* contains almost an

exact copy of the ad which ran in *The Tech*. A quick domain registration check shows that this URL is registered to a person called Will Naylor. According to the U.S. Tax Court, Will Naylor heads an organization which donates his sperm free of charge to recipients of his choice. To quote the Tax Court records regarding Will Naylor's organization, "Preference is given to women 'with better education' and no record of divorce, domestic violence, or 'difficult fertility histories' and are from families 'whose members have a track record of contributing to their communities'; who are in 'a traditional marriage situation'; who are under age 37; who are ethnic minorities."

Needless to say, this raises serious suspicions regarding the ad's author. He may not be who he claims to be in the ad (a white man and Chinese woman couple seeking to have a

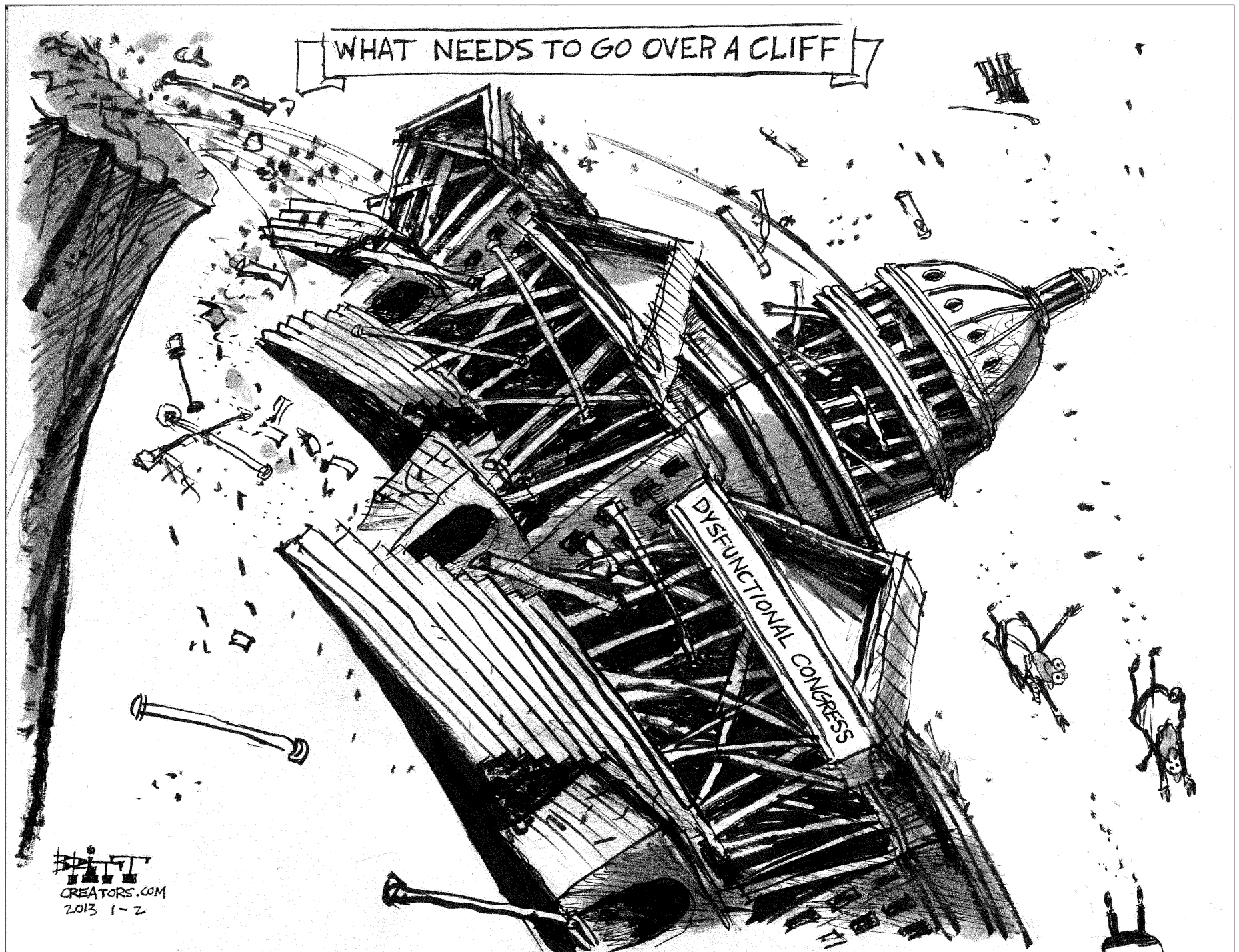
child), not to mention the blatant racism, classism, and sexism in his preference for sperm recipients and his creation of a noticeably egotistical sperm donation program. The writer of this ad may in fact be trying to get into contact with young, intelligent Asian women for more dubious reasons than egg donation alone.

Furthermore, even the most cursory Internet sleuthing shows that this ad may not be quite what it seems.

Before running future egg donor ads, we ask that *The Tech* considers the safety of MIT students above all else. For one thing, it is

inappropriate for a university publication to publish a solicitation for student egg donations from anything other than a licensed clinic, let alone an apparently unverified private individual. To put it succinctly, a school newspaper is not the place for this kind of advertisement. Taking safety into account also includes printing a disclaimer on any future egg donor ads about the potential negative side effects of becoming an egg donor, just as is required in states like California. It includes providing a link to a website that would provide readers with more information or referring them to MIT Medical. The best solution would be to simply not run ads that ask our students to subject themselves to danger for financial compensation.

This letter was written on behalf of the executive boards of Graduate Women at MIT (GWAMIT) and Feminists@MIT.





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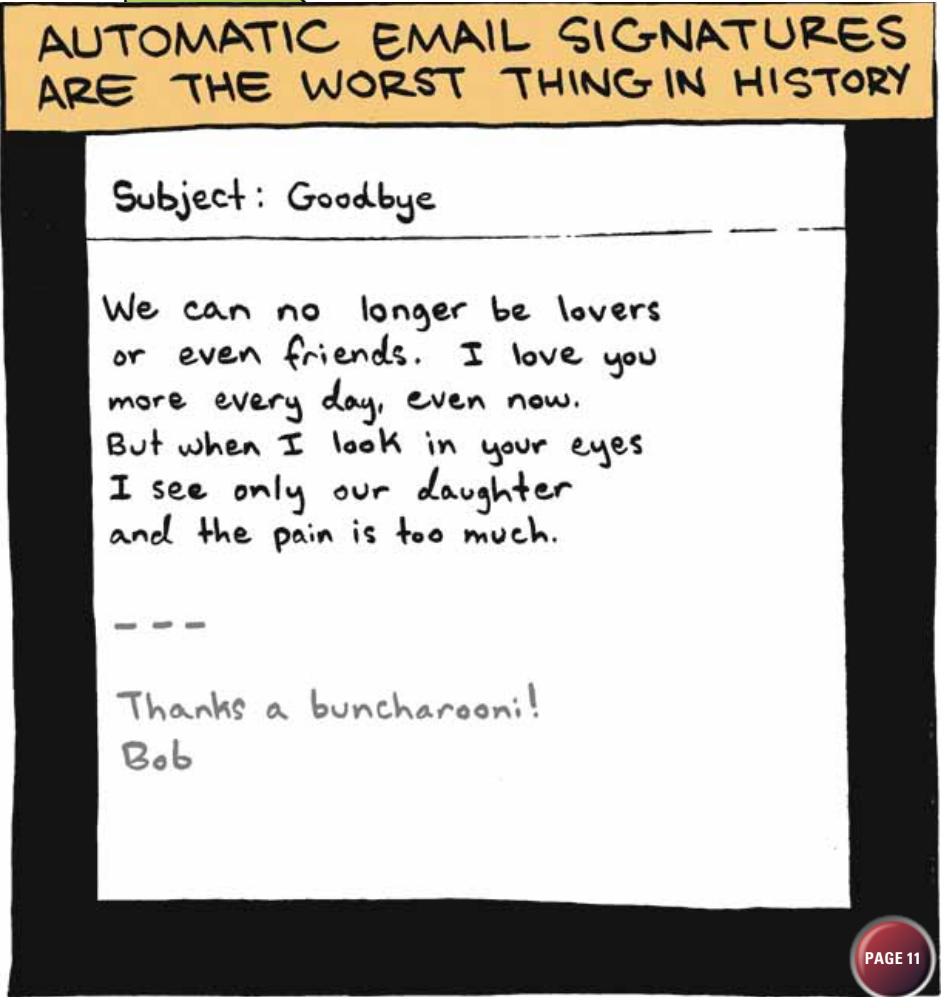
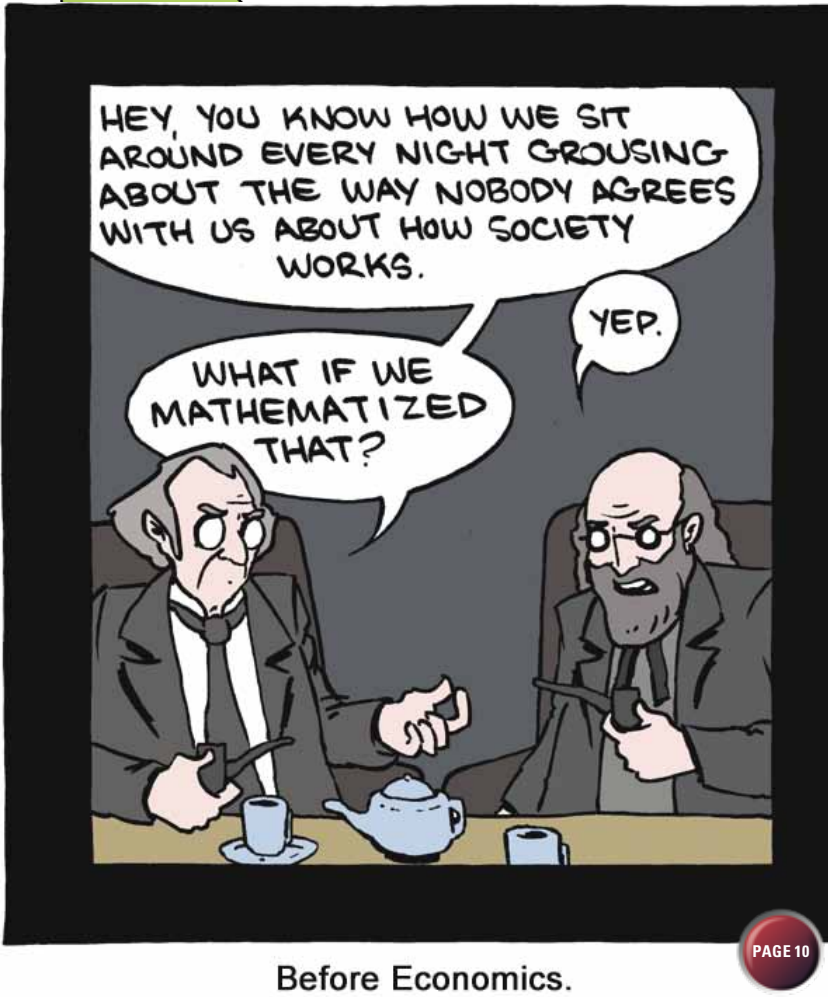
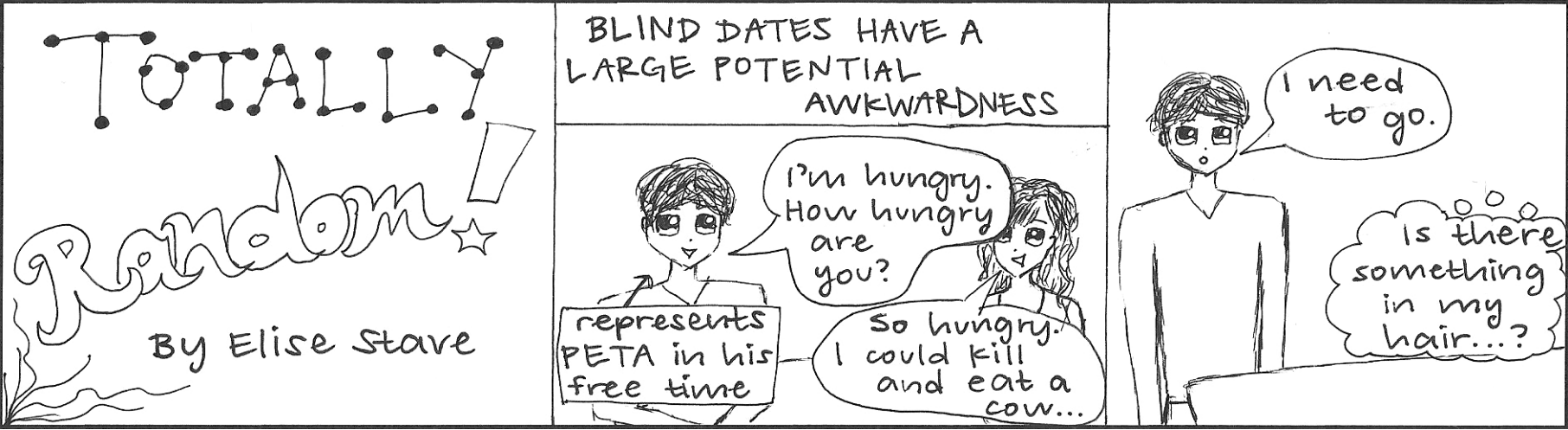
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Sudoku I

Solution, page 11

Solution, page 11

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

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.

Sudoku II

Solution, page 11

Solution, page 11

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

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.

Solution, page 11

ACROSS

- 1 DVDs, for example
- 15 Tennis Hall of Fame
inductee in '94
- 16 Optimistically
- 18 Sanctions
- 19 River through Fargo or
Hanoi
- 20 Publisher of a World
Leaders online directory
- 21 Disney Channel crime-
fighting teen
- 22 Gently touched, in product
names
- 24 Compact
- 26 Where "Getting to Know
You" is sung
- 27 Compact
- 29 Tool ____
- 30 Family nickname
- 31 Word from the Czech for
"pipe"
- 33 Hounds
- 35 Introduction to chemistry
- 37 Faint
- 38 Leonardo DiCaprio, by birth

43 Student Accounts
introducer in 2009

48 Free

49 It may be slippery

51 Blondie alternative

52 DJ who sells salsa

53 Give as an excuse

55 Subjects of some tales

56 __ bag

57 Hypoallergenic baby food

58 Rent

60 Toasters at dinners

61 Film commission

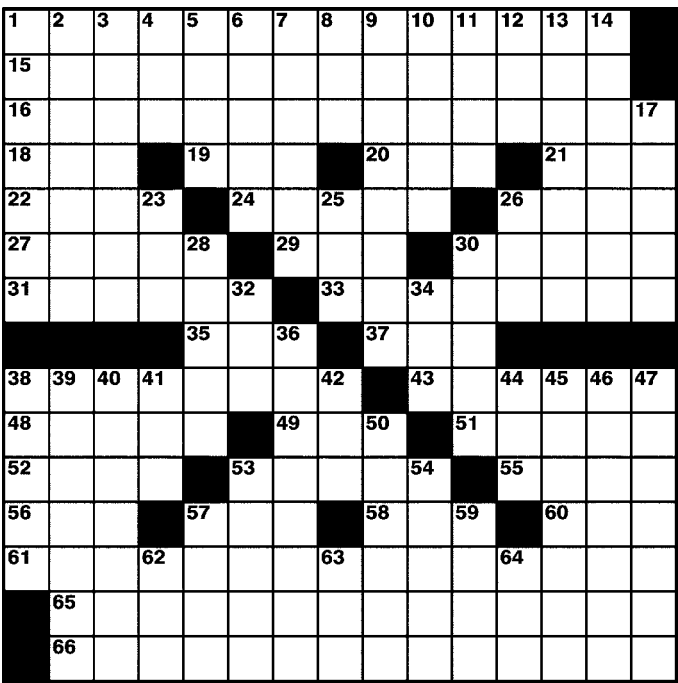
65 Bride in 2010 headlines

66 Stale

DOWN

- 1 Unsettled
- 2 Sort of two-piece suit
- 3 Groom in 1968 headlines
- 4 The least bit
- 5 "Sine __, nihil est vita"
- 6 Fills (up)
- 7 It's about 110 mi. from
Wichita
- 8 Banned organochloride

9 Drew out
10 Brilliant
11 World's third-largest wood consumer
12 Take in
13 Drawing out
14 Stuff
17 They all hold one atom
23 Shaver, e.g.
25 Full rights, for short
26 Glee coach
28 Titled
30 Strive for
32 Imposture
34 Take slowly
36 Four+ cups
38 Summer 2012 Duke Law visiting professor
39 Something expected of tyrants
40 Watercolor cousin
41 Lead character in Saint Joan
42 Argentina's daily soccer newspaper
44 Cry of discomfort



45 Further	57 Bombard
46 Humbled oneself, perhaps	59 Frat letters
47 Moderates	62 Chaps
50 Beans + shell + handle	63 Impressive, so to speak
53 Search party	64 It's often seen on an airport screen
54 Lollapalooza	



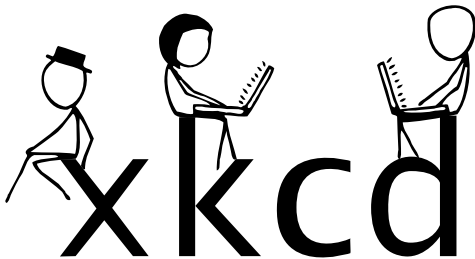
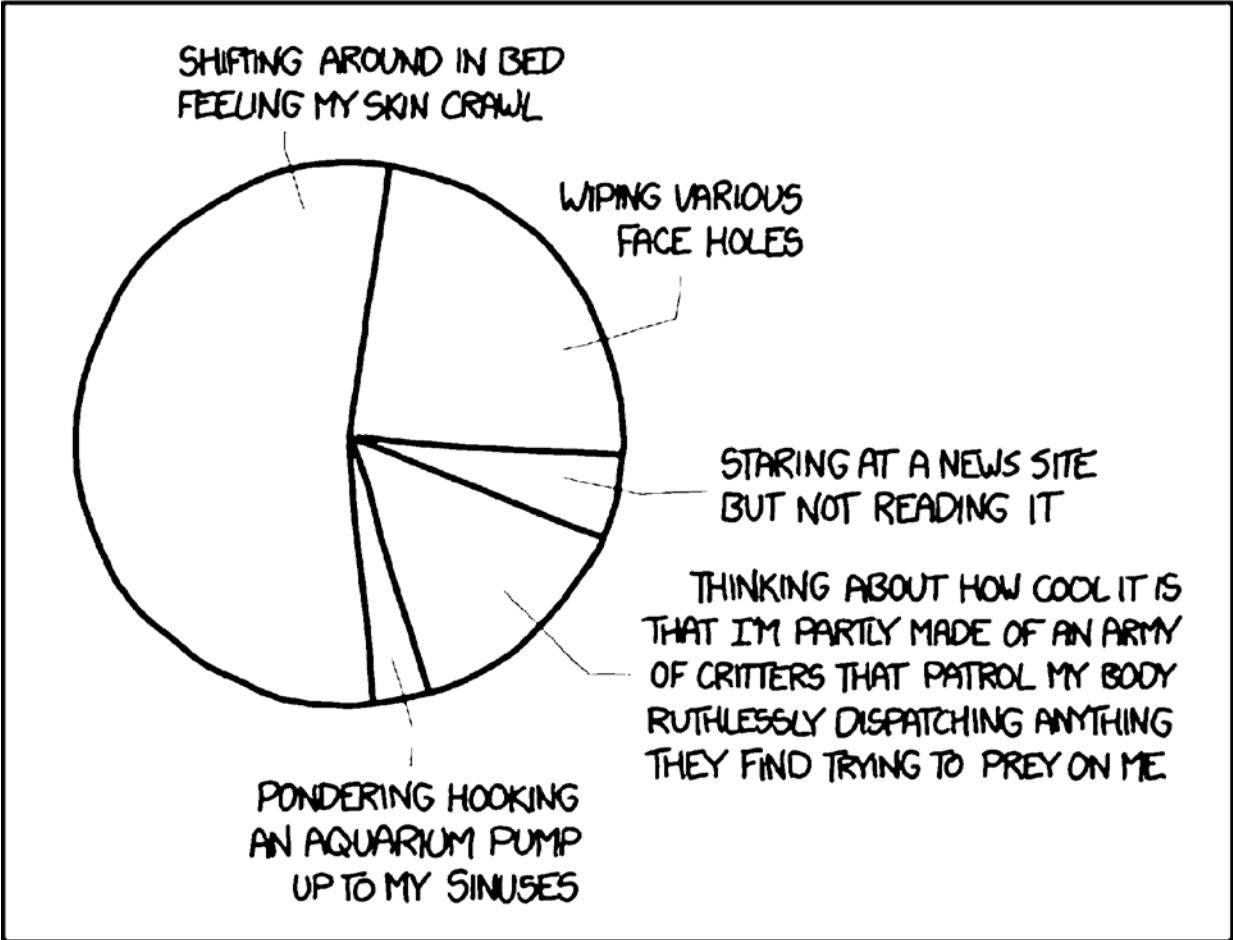
by Jorge Cham



JORGE CHAM © 2012

WWW.PHDCOMICS.COM

ACTIVITIES WHILE SICK:



**A WEBCOMIC OF ROMANCE,
SARCASM, MATH, AND LANGUAGE**

by Randall Munroe

[1157] Sick Day

Humanities classes experiment with new technology to enhance learning experience

Course technologies to let students interact with course material and each other

edX, from Page 1

Should gay marriage be allowed? — but also because of the engaging Socratic discussions Sandel involves the students in, often pitting classmates against each other. On justiceharvard.org, Internet users continue these debates in lengthy comment threads. No formal evaluation or recognition is given to these online fans of Sandel's course, despite the pages of passionate paragraphs they are still spinning out years after the videos and reading lists were first made public.

But edX will be awarding certificates to students who pass its version of the Justice course. According to course coordinator Kerstin Haase, students will be assessed based on their performance on multiple-choice questions. That's not to say motivated students won't also be writing essay-length posts on the discussion boards in response to poll questions and other students' opinions.

Still, without formal assignments, to what extent can the learning experience of courses like Justice — which for on-campus students includes group discussion sections and two papers — be replicated online?

EdX has offered mostly computer science classes, for which evaluating large numbers of students is less of a problem.

Such concerns have been voiced most anxiously by scholars of the humanities.

"We cudgel our brains to think of online modules that might make sense for literary education. One of my colleagues suggested that we might teach punctuation this way," MIT literature professor Ruth Perry wrote in the faculty newsletter. No satisfying answer to these questions seems to have emerged just yet. However, with its first offerings in the humanities and social sciences announced in December, edX will be trying out several approaches, including peer evaluations, limited enrollment, and new web tools that are still being built.

The new online classroom

ER22x: Justice is not the only big name on the list of new edX humanities courses to begin this spring. CB22x: The Ancient Greek Hero, for instance, is one of the longest running courses at Har-

vard, which is also putting up a course from its law school, HLS1x: Copyright.

For its part, MITx will be offering 14.73x: The Challenges of Global Poverty. All of the instructors for these courses are distinguished in their respective fields, and they all list their own works in their courses' reading lists.

Though moving classes online means losing some aspects of an traditional college course, the online format does bring new types of interaction to the table. For example, edX courses allow students to hold full discussions right next to any part of the learning sequence, whether it's a video clip or a practice question.

Course staff hope to create an interactive learning experience beyond watching videos and answering multiple-choice questions.

But until discussion board participation can be evaluated without human intervention, edX and similar platforms like Coursera will still have to find ways to separate the wheat from the chaff if they're going to offer certificates for course completion.

So far, edX has offered mostly computer science classes, for which evaluating large numbers of students is less of a problem. Multiple-choice questions or questions with numerical responses are reliably and objectively graded by computers. Automatic grading can even handle more open-ended questions, such as those that require the student to input an algebraic expression or to upload some code. Nor is a pair of human eyes needed to grade student work in the interactive circuits editor in 6.002x: Circuits and Electronics, and other ways of bringing the laboratory online are actively being developed, according to edX spokesman Dan O'Connell.

While The Ancient Greek Hero doesn't involve any lab work, its course staff also hopes to create an interactive online learning experience beyond watching videos and answering multiple-choice questions. In the new framework being developed, students will be able analyze ancient texts like the *Illiad* by making annotations at specific sections in the verse.

According to V. Judson Harward, who is helping with the technical aspects of "Heroes," the course will tell the students, "Here

are words and concepts you've been exposed to in the course, the lectures, the discussions — we'd like you to try to pick this passage apart."

Since the system is still being developed, it's unclear how student annotations will be graded. Jeff Emanuel, course "show runner," told *The Tech* that edX wouldn't just give higher marks to those who made more annotations. Instead, they're going for "a combination of volume and quality."

Engineering in poetry

A strategy being considered for Challenges of Global Poverty is peer evaluation. "EdX is working on a platform to incorporate case studies that people could work in groups on," course instructor Esther Duflo wrote in an email to *The Tech*. These groups would communicate in chat rooms, prepare case studies, and then evaluate other groups' work.

"Of course we are not yet sure this will work out," Duflo noted.

Some of Coursera's humanities courses are also using peer grading. Students in the Coursera version of Princeton's A History of the World Since 1300, for example, were assigned to write six essays answering questions like "How did Cold War rivalries affect European decolonization?" But for each assignment, students were also asked to assess the essays of five of their peers according to a rubric.

The history course is one of Coursera's offerings for which certificates are not awarded, as Princeton's policy does not grant certificates for any of its courses on Coursera.

The Heroes team has decided to stay away from peer evaluation, according to Harward. "In the normal Heroes course as you'd expect, the course does double duty," he said. The edX version will focus on close-reading skills and place less emphasis on the writing portion.

"Surprisingly, this course is a lot more like an engineering course than you might expect," Harward said, going on to describe how ancient poets in the oral tradition would refer to characters like Dawn with different epithets like "rosy-fingered Dawn" depending on their placement in the rhythmic lines of verse. The course will also track the differing connotations of the word "hero" throughout history.

Emanuel stresses that he wants students to be able to apply these concepts rather than just regurgitate them, and hopes that the new annotations feature will make the course "every bit as rigorous" as the traditional course, which is

writing-intensive.

As with Heroes, the online version of Challenges of Global Poverty is skimping on the writing assignments but keeping the more technical parts. Students of 14.73x will see all the numbers and graphs you might expect from an economics course.

A tradeoff

The only humanities course that will include traditional graded written assignments is Copyright, taught by William Fisher at Harvard Law School. But unlike the other courses on edX, Copyright has capped its enrollment to 500 students, who will be placed into sections of no more than 25 students each. Each section will be headed by a Harvard Law student, who will grade the exams.

"These [exams] will include questions commonly known as 'issue-spotters' in law school, which require students to read short narratives about real or fictitious disputes and then identify how existing law would direct their outcome, as well questions that ask students to craft normative arguments about how law should change in the future," Nathaniel Levy wrote in an email to *The Tech*. Levy is helping Fisher coordinate the edX version of Copyright, which is giving online students the real deal.

'Enrollment for the course is limited because we believe that high-quality legal education depends upon supervised small-group discussions of difficult issues.'

"Students in the edX course will receive the same types of exam questions as students in the HLS course," he says.

In aiming for rigor and quality, Copyright has sacrificed massiveness and openness, the two characteristics that distinguish MOOCs from online courses and that attracted so much attention to platforms like Coursera and edX in the first place.

Unlike any of the other edX courses, Copyright requires students to apply for a spot. While the course doesn't have any prerequisites or require any legal background, "applicants must be at least 13-years-old, have a good grasp of the English language, and be willing to devote eight hours

per week to learning and discussing the material," according to the course description. "When admitting participants, the course organizers will seek to create a group that is diverse along many dimensions, including country of residence, age, occupation, educational background, and gender."

It's still uncertain what more work and future technologies will bring [to these new humanities courses]. The interactive annotations system wouldn't see its final version in 2013, and Fisher's Copyright course is explicitly experimental.

"Enrollment for the course is limited because we believe that high-quality legal education depends, at least in part, upon supervised small-group discussions of difficult issues," the course description says. Course materials will still be made publicly available on Fisher's website.

An uncertain future

Despite the limitations these new humanities courses are facing, it's still uncertain what more work and future technologies will bring. Challenges of Global Poverty is seeing its first iteration in February, a date Duflo only found out about in November. Emanuel admitted that the interactive annotations system wouldn't see its final version in 2013, and Fisher's Copyright course is explicitly experimental.

But whether or not it will ever be possible for MOOCs to do justice to Justice and other writing-intensive courses, those involved with MOOCs seem excited to bring their visions to a global scale.

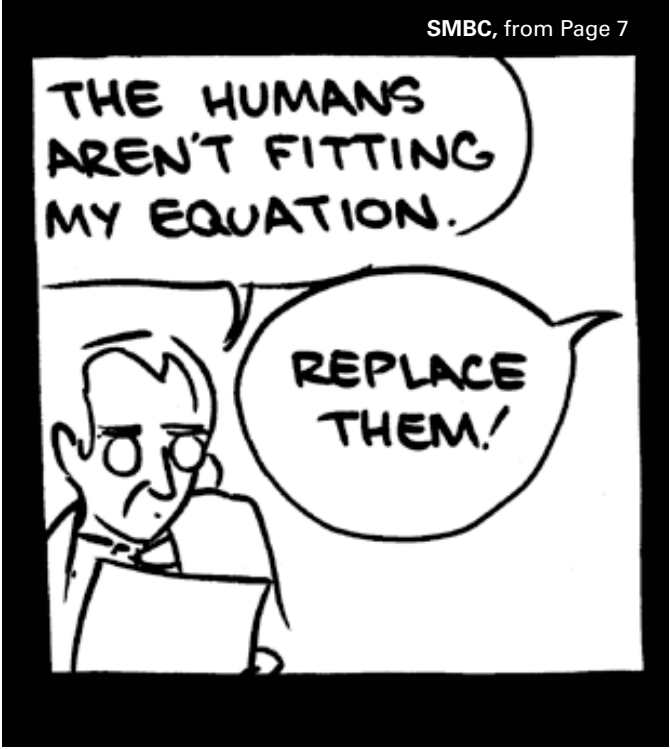
Harward noted that Heroes, a class that explores Greek classics, will reach students in south and southeast Asia, for instance — students perhaps in contact with other oral and literary traditions. It's an opportunity to exchange insights.

"Ever since I heard about edX. I thought a course on poverty would be a wonderful thing to have available to a vast number of people," Duflo said.

Harvard student Ding Zhou contributed reporting to this article.



A Quest Diagnostic building in Central Square was one of many properties that have recently been sold in Cambridge, MA.



SMBC, from Page 7

Obama nominees in step on light footprint

Caution, covert action, and modest US military footprint fit the geopolitical moment

By David E. Sanger
THE NEW YORK TIMES

WASHINGTON — With the selection of a new national security team deeply suspicious of the wisdom of U.S. military interventions around the world, President Barack Obama appears to have ended, at least for the moment, many of the internal administration debates that played out in the Situation Room over the past four years.

He has sided, without quite saying so, with Vice President Joe Biden's view — argued, for the most part, in the confines of the White House — that caution, covert action and a modest U.S. military footprint around the world fit the geopolitical moment. The question is whether that approach will fit the coming challenges of stopping Iran's nuclear program and the potential collapse of Syria.

Gone for the second term are the powerful personalities, and more hawkish voices, that pressed Obama to pursue the surge in Afghanistan in 2009, a gamble championed by Secretary of State Hillary Rodham Clinton and Robert Gates, the former secretary of defense. Gone from the CIA is the man who urged Obama to keep troops there longer, David Petraeus.

The new team will include two Vietnam veterans, Sen. John Kerry and Chuck Hagel, who bear the scars of a war that had ended by the time the president was a teenager, and a counterterrorism chief, John Brennan, who helped design the "light footprint" strategy of limiting U.S. interventions, whenever possible, to drones, cyberattacks and special operations forces. All are advocates of those low-cost, low-U.S.-casualty tools, and all have sounded dismissive of attempts to send thousands of troops to rewire foreign nations.

Most important to Obama and his national security adviser, Tom

Donilon, all three are likely to accommodate themselves, in ways their predecessors often did not, to a White House that has insisted on running national security policy from the West Wing.

Gone for the second term are the powerful personalities, and more hawkish voices, that pressed Obama to pursue the surge in Afghanistan in 2009.

"One of the characteristics of this administration has been that decision-making has been centered in the White House," said Dennis Ross, a Mideast expert who left the Obama administration a year ago but never wandered far from some of its key debates. "And most second-term administrations don't change their sociology."

But if they grab hold of the national security levers after what many predict will be, for Hagel and Brennan, bruising confirmation hearings, they will confront problems that may test whether the light footprint carries enough weight.

"Issues one and two will be cutting the defense budget and confronting Iran," said Michael Mandelbaum, a political scientist whose 2010 book, "The Frugal Superpower," dealt with the challenge of trying to manage the world on the cheap. "And then you will have issues like Syria, which test the question of whether you can manage to control a dangerous situation with no boots on the ground — and unless something dramatic changes, there will be no boots."

Hagel, who was both a senator and a cellphone entrepreneur,

has long been a critic of Pentagon bloat. But others with business experience, like Donald Rumsfeld, have believed they could bring market discipline to one of the country's most sprawling enterprises, only to discover that killing off unneeded weapons systems has almost nothing to do with business decisions and everything to do with the politics of congressional districts and campaign funds.

Obama's bet was that by appointing a Republican, he will better his chances of overcoming those obstacles. What he discovered even before announcing Hagel's appointment is that the former senator burned many bridges with his Republican colleagues, in part with his outspoken opposition to the Iraq War, despite voting in 2002 to authorize military action, and to the 2008 surge when President George W. Bush was still in office.

"If the president thinks Chuck Hagel can get him the Republican votes to downsize the Pentagon," said one former senior aide to Bush, who declined to speak on the record, "I think he is in for a very rude surprise."

Hagel suggested that empty threats to Iran close opportunities for dialogue, and supports unilateral sanctions.

Then there is Iran, which will be a test for all three men, for different reasons.

Hagel has been particularly vocal about the dangers of a military confrontation with Tehran. While both Gates and his successor, Leon Panetta, expressed similar concerns at various points in the

first term, Hagel's view is considerably to the left of Obama's.

The president has, gradually, endorsed "coercive diplomacy," telling the American Israel Public Affairs Committee in March, "As I've made clear time and again during the course of my presidency, I will not hesitate to use force when it is necessary to defend the United States and its interests."

Kerry, Brennan, and Biden are all of a view that the United States has no way to get into Syria, and if it got in, no way to get out.

But Hagel has opposed unilateral sanctions and suggested that threatening Iran just closes down opportunities for dialogue.

"The key to coercive diplomacy is that the side you are trying to influence is convinced you are willing to follow through on the threat," said Ross, who drafted some of those threats. "The president has been clear, but from others there have been mixed messages."

Kerry has another challenge: how deeply to wade directly into diplomacy with Iran, if talks begin. Clinton almost always let others handle it.

One of his allies in the Senate, alluding to the possibility of military conflict, said, "My guess is that you are going to see John Kerry dive in himself, because he knows what the alternative will be."

Brennan faces his own Iran challenge: He would inherit the CIA's project, which he partly oversaw at the White House, to subvert Iran's nuclear program. The core of that effort was "Olympic Games,"

the complex introduction of a cyberweapon into the enrichment plant at Natanz, where Iran made most of its nuclear fuel. But the focus for Brennan would be the deep underground site at Qom, where Iran is producing the fuel that is closest to bomb grade. And, much as he began to give speeches justifying how America uses drones, he would face growing pressure to explain how the United States uses offensive cyberweapons — weapons it has never acknowledged possessing.

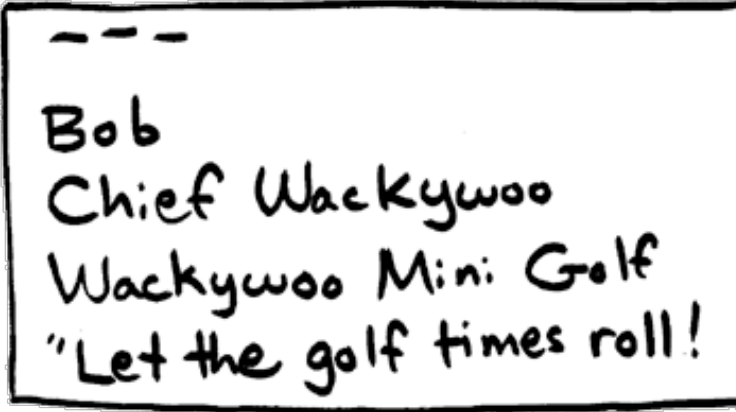
But the hardest test of the light footprint strategy may come in Syria. It is where the specter of the Iraq War, and Vietnam before it, most haunts the discussion. While Obama made a passionate case on humanitarian grounds in 2011 for the U.S. intervention in Libya — done from the air, and with drones — there is no serious consideration of doing the same in Syria, where the United Nations estimates that 60,000 have died.

Kerry, Brennan and Biden are all of a view that the United States has no way to get into Syria and, if it got in, no way to get out.

"But the president has also said that Assad must go," Mandelbaum noted, referring to Syria's leader, Bashar Assad. "And we've worried about whether, if he does go, we get another Afghanistan-under-the-Taliban. The dilemma here is that you have no hope of controlling events unless you invest in boots on the ground, and that's what the president has made clear we're not going to do."

That problem, like slowing the Iranian nuclear program or taking out al-Qaida's cells in Mali, may fall into the lap of Brennan at the CIA. Because for all the talk of demilitarizing the intelligence agency — reducing its role in conducting strikes and going back to stealing secrets and analyzing intelligence — at the end of the day Obama's favorite way to use force is quickly, secretly and briefly.

SMBC, from Page 7



Solution to Crossword
from page 8

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

Solution to Sudoku I
from page 7

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

Solution to Sudoku II
from page 7

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

Solution to Baby Techdoku
from page 9

3	2	1
1	3	2
2	1	3

Solution to Novice Techdoku
from page 9

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

Solution to Apprentice Techdoku
from page 9

1	7	3	6	4	2	5
5	4	7	3	1	6	2
6	5	1	4	2	7	3
7	6	2	5	3	1	4
3	2	5	1	6	4	7
4	3	6	2	7	5	1
2	1	4	7	5	3	6

Solution to Sensei Techdoku
from page 9

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

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Engineers beat Johnson & Wales University, 55–43

DAPER STAFF

In the first meeting between two programs, MIT emerged with a 55-43 victory over Johnson & Wales University in a non-conference women's basketball game on Wednesday night. Alexis R. Isaac '15 paced the Engineers (6-4) with 18 points, to go along with six rebounds, two steals, and two blocks.

the rally. Johnson & Wales battled back and evened the score at 19, courtesy of a 5-of-6 performance at the free throw line and a layup with 3:10 to go.

Ramachandran's free throw broke the deadlock almost a minute later, as two free throws and a layup by Isaac gave the Engineers some breathing room at 24-21. Johnson & Wales drained a pair of free throws on its next possession while Sharon S. Hao '14 made both of her free throw attempts to give MIT a 26-23 lead at halftime.

The Wildcats sank two free throws to start the second stanza, but a three-point play by Sabrina M. Drammis '16 sparked a 13-6 spurt, which resulted in a 39-31 advantage with 14:16 on the clock. Johnson & Wales recorded seven straight points during the next five minutes to come within one (39-38). This was as close as it would get, as MIT rattled off eight unanswered points, resulting in its largest cushion of the night with 5:05 remaining.

The hosts continued to attack, trimming the deficit to five (47-42)

in the next 51 seconds. A layup by Isaac thwarted the comeback attempt while the Wildcats tallied what was their final point of the game from the free throw line at the 3:38 mark. The Engineers secured the victory with two free throws by Hao and Isaac during the final two minutes, and Mari R. Kordell '15 buried a jumper with two ticks left.

The Engineers secured the victory with two free throws during the final two minutes.

Ramachandran racked up a game-high 12 rebounds and five blocks to go along with eight points and two assists. Kordell finished with 12 points, four boards, and four assists as Drammis hauled in eight rebounds. In addition to scoring all four of her points from the free throw line, Hao tacked on five steals and five rebounds.

to pound the ball inside, the Lyons couldn't come up with an answer. Wheaton did come up with back-to-back baskets from O'Loughlin and Eddie Capstick to cut MIT's lead to 17 points, but a basket by Burke with 12:45 to play pushed the Engineers' lead to 21 points at 57-26. MIT saw its advantage hold at 20 points or better the rest of the way.

MIT did not let up in the second half and quickly built its lead to 21 points.

Andrew M. Acker '15 came off the bench to hit on all seven of his field goal attempts to help MIT to a 60 percent shooting performance, finishing with a career best of 15 points along with six rebounds. William Tashman '13 recorded his second straight double-double, and sixth of the season, with an 11-point, 12-rebound night. Kates dished out six assists to go along with his 20-point afternoon to lead all players. Wheaton did not get a double-digit scorer, with O'Loughlin leading the Lyons with nine points. Mike Cannon led Wheaton with seven rebounds, adding eight points and a steal to his totals.

Isaac paced the Engineers with 18 points, to go along with six rebounds, two steals, and two blocks.

The Wildcats took an early 6-4 edge, but MIT countered with a 15-6 run in a span of eight minutes to claim a 19-12 advantage at the 6:31 mark. Maya K. Ramachandran '16 contributed seven points, including the first five of

MIT beats Lyons

Men dominate Wheaton, 84-47

DAPER STAFF

Saturday afternoon was the start of New England Women's and Men's Athletic Conference play for the MIT men's basketball team, and the Engineers kicked things off with a solid effort, rolling past Wheaton College with a final score of 84-47. Mitchell H. Kates '13 scored 20 points, and Matthew M. Redfield '15 established a new career best of 19 points to help MIT improve to 10-2 and 1-0 in the NEWMAC. Wheaton fell to 6-5 and 0-1 with the loss.

from Mike O'Loughlin and Scott Faucher keyed a 9-2 run by Wheaton that brought the Lyons back to within a point at 12-11 when Faucher's shot fell through at the 13:27 mark.

That would be as close as Wheaton would get for the rest of the game, however, as MIT responded and took control of the contest with a 13-3 run. Redfield started the burst with a layup. When James R. Burke '13 canned a pair of free throws four minutes later, MIT extended its lead to 25-13. Wheaton cut it down to an eight-point deficit on a jumper by Will Bayliss with eight minutes left in the half, but the Engineers scored seven straight points, four by Kates, to open up a 15-point advantage.

Wheaton, who shot just 30 percent in the game, could not get any closer the rest of the half as it made just four field goals over the last eight minutes. The Lyons were also hampered by fouls as they tried to stop the inside game of the Engineers, who took advantage by hitting on 16 of 19 free throw attempts as they went on to a 41-26 halftime lead.

MIT did not let up in the second half and quickly built its lead to 21 points by outscoring Wheaton 10-4 over the first three minutes of the half. A layin by Kates made it 51-30 at the 17:17 mark, and as the Engineers continued

The Lyons were hampered by fouls as they tried to stop the inside game of the Engineers.

MIT did most of its damage in the paint in its first game of 2013, outscoring Wheaton by a significant 52-18 margin. The first points of the game for the Engineers, however, came from behind the arc as Justin M. Pedley '16 nailed a trey to give MIT a lead that it would never relinquish. The Engineers jumped out to a 10-2 lead three and a half minutes in after a pair of Redfield free throws, but the Lyons responded with some long-range shots. Three-pointers

UPCOMING HOME EVENTS

Thursday, January 10

Men's basketball vs. Coast Guard Academy 6 p.m., Rockwell Cage

Women's basketball vs. Babson College 8 p.m., Rockwell Cage

Friday, January 11

Swimming and diving vs. Williams 4 p.m., Zesiger Center Pool

Saturday, January 12

Track and field Alumni Meet *12 p.m., Johnson Athletic Center*

Squash vs. Connecticut College 3:30 p.m., Zesiger Center Courts

Squash vs. Northeastern *5:30 p.m., Zesiger Center Courts*

Men's basketball vs. Babson College 2 p.m., Rockwell Cage



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