Three fraternities join rush

PBE rejoins rush; Beta, Alpha Sig find founders

By Bruno B. F. Faviero

With six hours of public meetings on Kend- dall and Central Squares this week across two committees, the city is trying to decide be- tween competing plans for Kendall Square, but MIT has still not weighed in definitively on its intentions.

The provost has launched a faculty commit- tee to advise him in determining MIT’s posi- tion, but it only formed last month.

Additionally, the Cambridge Historical Commission has set its sights on designating three MIT buildings on Main Street as land- marks, further limiting the options.

There are more questions than there are answers, and there is no semblance of a clear timeline for resolution.

Faculty task force formed

On Thursday, Aug. 9, 2012, Provost Chris A. Kaiser announced to the faculty that he had appointed a “Task Force on Community Engagement in 2030 Planning” chaired by former chair of the faculty Thomas A. Kochan (Management).

The committee is charged with advising the provost about “decisions related specifically to the development of MIT property in Kendall Square” as well as figuring out how to engage the MIT community in the MIT 2030 decision process. “MIT 2030” refers to MIT’s future real estate development planning effort.

The committee’s appointment is a reaction to criticism among the faculty of MIT’s devel- opment is the potential designation of three MIT buildings on Main Street as land- marks, further limiting the options.

IN SHORT

Today is the last day to reg- ister! Late registrations are subject to a $30 fine.

Final term seniors must submit their HASS concen- tration completion forms and second term juniors must submit their HASS concentration proposals today. Late forms are subject to a $30 fine.

Today is the last day of the APO book exchange! Go through your list and get rid of books you no longer need.

The deadline to waive the MIT Student Extended Insur- ance Plan or enroll your family is Sept. 15. To waive, go to http://medweb.mit.edu and file your electronic waiver.

EdX to offer proctored exams worldwide

Yesterday, edX announced a partnership with Pearson VUE that would allow students the option of taking a proctored fi- nal exam for their online class. Under the agreement, those enrolled in an edX course will have the option of taking the course final exam at one of over 450 Pearson VUE test centers in more than 100 countries, for a nominal fee. The proctored test will be the same electronic test that those who take it fully on- line experience.

“Our online learners who want the flexibility to provide potential employers with an independently validated certifi- cate may now choose to take the course exam at a proctored test site” said Anant Agarwal, presi- dent of edX, in a press release.

Pearson VUE provides aca- demic, government, and profes- sional testing programs around the world, and also provides proctored tests for online educa- tion provider Udacity.

MIT unresponsive on Kendall development

Faculty Task Force formed, but report not released until later this fall

By John A. Hawthkinson

Concerns about the Koch Institute’s frontage on Main Street, above, have been repeat- edly brought up by Cambridge Planning Board. See sidebar articles p. 7. Some board members felt there is too much dead space in Main Street’s retail, isolating the new 610 Main (Pfizer) to the west from Kendall Square to the east.

Alcator C-Mod may lose funds

Shutdown could lead to massive lay offs for Tokamak team

By Leon Lin

President Obama’s budget request to Congress for fiscal year (FY) 2013, an- nounced in February, proposed to shut down MIT’s federally-funded Alcator C-Mod, a tokamak (magnetically confined device). To give itself six more months to agree on a formal ap- propriations bill, Congress will pass a continuing resolution this month. The resolution will likely sustain funding for Alcator C-Mod at at least current levels until the final budget for FY 2013 is out. If the final bud- get passed by Congress is in line with the president’s request, technical, engineering, and administrative staff would be laid off, and some 30 PhD stu- dents in Nuclear Science & Engineering (Course 22) would be forced to graduate by October 2013.

The Department of Energy (DOE) has ordered Alcator C-Mod not to oper- ate in the interim. However, researchers at the tokamak will not begin disman- tling the device just yet, in case Congress decides to resume funding for research at Alcator C-Mod, which aims to devel- op a source of clean energy from nuclear fusion power.

“Our best information at this point indicates that C-Mod will be put into a ‘ready standing,’” says Zach S. Hartwig, a Course 22 PhD student, who believes and hopes that there will be no layoffs.

“We are essentially bucking down until the next continuing resolution, due in February or March of 2013, which will be the FY13 budget, under which we hope to receive funding. We can’t assume full experi- mental operations.”

In June, 12 MIT PhD students, in- cluding Hartwig, and an undergraduate from the University of Texas at Austin visited Congress, meeting with over 30 congressional offices. “Our goal was to educate congressional offices on the situation and ask for support for domes- tic fusion in the upcoming continuing resolution,” says Hartwig.

The only three months in operation in the United States are Alcator C-Mod, DIII-D at General Atomics, and NSTX at the Princeton Plasma Physics Labora- tory. The presidential FY2013 budget would cut money out of all three to sup- port ITER (International Thermonuclear Experimental Reactor), an international fusion project.

**MIT PEB needs to change**

Students should be able to test out of PE classes. OPINION, p. 4

**A LOVE LETTER TO MIT**

A Wellesley alum reflects. OPINION, p. 5

**NFL PREDICTIONS**

Who will succeed this season? SPORTS, p. 16

**REFEREE MADNESS**

Do you DARE see MTG’s newest production? ARTS, p. 9

**A SHORT INTRO TO ENGINEERING**

Even MIT students could brush up. ARTS, p. 10

**SECTIONS**

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Putin calls missile deal more likely if Obama wins

VLADIVOSTOK, Russia — President Vladimir V. Putin of Russia sauntered into U.S. presidential politics on Thursday, praising President Barack Obama as “a very honest man” and chastising his Republican rival, Mitt Romney, for describing Russia as “without question our No. 1 geopolitical foe.”

Putin was asked about the potential repercussions of an interview with the state-controlled television network RTV. The interview was recorded earlier this week but broadcast on national television on Thursday, a week before the arrival in Vladivostok of Romney and President Obama for the annual Asian-Pacific Economic Cooperation summit conference.

Putin said that if Obama re-elected in November, a compromise could be reached on the contentious issue of Russian gas exports to Europe, which Russia has strongly opposed. On the other hand, he said, if Romney becomes president, Moscow’s fears about the missile system — that is, despite U.S. assurances, actually directed against Russia — would almost certainly prove true.

With a reminder of Romney’s remark about Russia, Putin asked if he could work with a Romney administration.

“Yes, we can,” he said. “We’ll work with whichever president gets elected by the American people. But our effort will only be as efficient as our partners will want it to be.”

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FRANKFURT, Germany — The European Central Bank on Thursday took its most ambitious step yet toward combating the eurozone crisis, throwing its unlimited financial clout behind an effort to protect Spain and Italy from financial collapse.

In a move that was strongly supported by Spain and Italy, the bank and Draghi, president of the European bank supervisor, needed to ensure the survival of the common currency. For the central bank itself, it posed a quandary, forcing the authorities to verify the status of illegal immigrants.

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Enthusiasm in Europe helps lift US stocks

By Nathaniel Popper

The markets have greeted several previous efforts to solve Europe's economic woes with euphoria, only to be quickly deflated. While there could be some setbacks along the way this time, too, investors suggested that the enthusiasm may not be fleeting. They showed a willingness to dive back into stocks and risky assets like Treasury bonds.

Spanish and Italian bonds and sold safer assets like Treasury bonds. The Standard & Poor's 500 index surged nearly 2 percent, surpassing the peak reached earlier this year, hitting a level last seen in January 2008, before the financial crisis. The Nasdaq composite index rose to its highest point since 2001.

Stocks in the U.S. were also helped by promising data about the U.S. employment picture, ahead of Friday's highly anticipated jobs report.

A weak employment number could easily derail investor optimism. But on Thursday, investors were captivated by the ECB president Mario Draghi's announcement that he is ready to launch a bond-buying program that will provide what he said was a "fully effective backstop" for the struggling euro.

"The central bank is clearly preparing to tackle the problem head on," said Bernard Baumohl, the chief global economist at The Economic Outlook Group. "I think people will grow more encouraged that we are finally seeing the light at the end of this tunnel."

The markets have been moving up since Draghi announced his intention to do "whatever it takes" to save the eurozone in late July. Since then, the eurozone's blue chip index, euro Stoxx 50, has risen nearly 19 percent, bringing it up over 20 percent for the summer. The index is up 3.4 percent on Thursday.

The plan Draghi announced was not much different than what investors had been anticipating. But the full details he provided displayed the breadth of measures he is ready to take.

Japan said to have tentative deal to buy disputed islands

KYOTO, Japan — The Japanese government has struck a tentative agreement to buy three uninhabited islands that are part of a chain at the center of a heated territorial dispute with China, a person close to the talks said Thursday.

A government negotiator got a verbal agreement from the islands’ owners, a family living in suburban Tokyo, according to the person knowledgeable about the talks, who asked not to be identified because the negotiations were still in a sensitive stage. He said the particulars of the deal, including a price, had yet to be decided, and that the deal could still fall through.

A deal would allow the government to nationalize three of the five major islands in the East China Sea chain, known as the Senkakus in Japan and the Diaosu in China. It would not directly affect the more crucial issue of sovereignty over the islands, which are already administered by Japan but claimed by China and also Taiwan.

While the dispute has been simmering for decades, emotions flared in April after Tokyo’s outspoken rightist governor, Shintaro Ishihara, proposed that his city buy the islands. That started a series of landings last month on the islands by nationalists, first from China and then Japan; the Japanese landing contributed to anti-Japanese protests in China.

—Martin Fackler, The New York Times

Scores of migrants die after boat sinks off Turkish coast

Istanbul — At least 58 migrants drowned in the Aegean Sea just off the Turkish coast after the fishing boat that was carrying them sank early Thursday, local officials told a Turkish news agency.

Forty-six others who were on the boat, including the two-man crew, got to shore safely, and have been detained, the semi-official Anatolian News Agency reported, adding that two of the passengers were hospitalized. Fifteen of the dead were apparently locked in a cabin on the sinking boat, and it was not clear why, the report said.

The boat, about 39 feet long, was carrying more than 100 Syrians, Iraqis and Palestinians who were apparently trying to migrate to the European Union when it struck rocks and foundered near the Turkish township of Menderes in Izmir province, the agency said. The boat was only about 160 feet from shore at the time.

In remarks to Turkish reporters, Ardahan Totuk, the deputy governor of Izmir Province, declined to say where the boat was headed. Turkey’s Aegean coastal region and the Greek islands a short distance offshore are a frequent route for illegal immigrants seeking refuge in Europe, often by paying smugglers to transport them clandestinely across the sea. The Greek island of Samos is less than 20 miles from where the boat sank.

—Sebnem Aran, The New York Times

Assassination highlights rifts facing Syria rebels

By David D. Kirkpatrick

BEIRUT — The assassination of a Syrian rebel fighter linked to al-Qaeda called new attention Thursday to the ideological differences among the Islamists fighting the government of President Bashar Assad and threatened to set off new strife among the rebels.

The mystery surrounding the fighter’s death has opened a new area known as Sarmada on the Turkish border, speaking on the condition of anonymity for his safety. The body was found Wednesday in an area known as Sarında on the Turkish border, several rebel fighters said in interviews over the Internet. All confirmed that the fighter was among the rebels, among the rebels, among the rebels, among the rebels, among the rebels, among the rebels, among the rebels.

His killing aroused calls for revenge from the Islamists fighting the government, a major fighting group based in the area, known as the Islamic Shura Council, in which he also played a leading role.

Some quickly pointed the finger at a major fighting group based in Kansu, Al Furooq Brigade, which is considered Islamist but is opposed to al-Qaeda’s hard-line ideology. Brigade leaders often collaborate on specific actions or fights, but each typically reports to its own leader.

There has been tension between Al Furooq fighters and the rebels from the Shura Council,” said the commander of another brigade in the area, speaking on the condition of anonymity for his safety.

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A fairer PE policy

By Sam Shames

In prepared remarks to the MIT community last year, President Reif declared that “Residents on several halls, unhappy that the amenities were misappropriated... disconnected power from the antennae themselves in order to restore service.” IS&T understands the importance of having these services in working order for the students and the campus, but it is not acceptable for anyone to tamper with the infrastructure for any reason. MIT and IS&T partner with vendors in various infrastructure initiatives that benefit the community, and ask that community members be respectful of the equipment owned and installed by vendors.

Letters to the Editor

A note from IS&T

In the “EC cell phone woes” article in the August 24 edition of The Tech, Stan Gill writes that “Residents on several halls, unhappy that the amenities were misappropriated... disconnected power from the antennae themselves in order to restore service.” IS&T understands the importance of having these services in working order for the students and the campus, but it is not acceptable for anyone to tamper with the infrastructure for any reason. MIT and IS&T partner with vendors in various infrastructure initiatives that benefit the community, and ask that community members be respectful of the equipment owned and installed by vendors.

Dear The Tech,

The Tech’s August 24 edition contained a letter from Stan Gill, written under the name of President Reif, stating that about 300 people in most of the MIT dorms had connected the electrical power from “the antennae” to their dorm rooms to restore cell phone service after IS&T cut off power due to interference.

This article incorrectly represented the content of this letter. The Tech’s Editorial Board is writing to set the record straight regarding this event and to make clear the factual inaccuracies contained in the August 24 edition’s article.

First, the August 24 edition’s letter states that “Residents on several halls, unhappy that the amenities were misappropriated... disconnected power from the antennae themselves in order to restore service.” IS&T understands the importance of having these services in working order for the students and the campus, but it is not acceptable for anyone to tamper with the infrastructure for any reason. MIT and IS&T partner with vendors in various infrastructure initiatives that benefit the community, and ask that community members be respectful of the equipment owned and installed by vendors.

Letters to the Editor are opinion articles submitted by members of the MIT or local community.

Guest Column

A fairer test should be an equal combination of physical fitness and mental health, combining physical benchmarks with a written section.

A fair test should be an equal combination of physical fitness and mental health, combining physical benchmarks with a written section. A new system that provides a fairer PE policy is one where students have the option to pass a single fitness and wellness test instead of taking four different PE classes. The specific tests of the specific would be set by DAPER and would be reflective of the core values of the program. It might include sections on wellness, nutrition, and stress management, as well as fitness, testing students on all the necessary components. Students who pass the test would demonstrate a proficient understanding of the core values of DAPER and how to utilize the values beyond the classroom. A fair test should be an equal combination of physical fitness and mental health, combining physical benchmarks with a written section. The test could even be offered only once per semester to students to ensure they have the option to make the requirement more flexible. Before the new policy was put into effect, students had an incentive to take courses to get credit for physical activities after the August 24 edition of The Tech, Stan Gill wrote that “Residents on several halls, unhappy that the amenities were misappropriated... disconnected power from the antennae themselves in order to restore service.” IS&T understands the importance of having these services in working order for the students and the campus, but it is not acceptable for anyone to tamper with the infrastructure for any reason. MIT and IS&T partner with vendors in various infrastructure initiatives that benefit the community, and ask that community members be respectful of the equipment owned and installed by vendors.

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A love letter to MIT

The Institute affects its immediate community too

By you making it possible for me to be an efficient learner, you made me a more successful person academically.

Even now, being at Harvard, I am still benefiting from MIT. Your professors open their arms to all students regardless of whether they are getting a degree from MIT. My doctoral research at Harvard entailed interviewing scientists at the forefront of 21st century science, and your most notable professors were there for me. Robert Langer replies to emails on his Blackberry with an average response time of one minute. And yes, I mean Bob Langer, the PI of the largest biomedical engineering lab in the world and winner of the Noble Prize-equivalent for engineers (Charles Stark Draper Prize). Philip Sharp agreed to a sit-down conversation without any hesitation, a Noble Prize winner. I am always so amazed at how the people at MIT are so humble given their brilliance, a rare trait among the elite schools. I know this from being at a school where people wear double pop collars and white pants with pearls. I even have MIT professors sitting on my Harvard dissertation committee. None of them have any obligation to me as I am not an official student at MIT, but they do it because they care about their contributions beyond the walls of the institution. This is the energy you foster at MIT. Thank you.

Besides enriching my academic and research life, you enriched my social life during college. By allowing Wellesley shuttles to drop off students at various MIT locations, you’ve enriched the love lives of many Wellesley and MIT students. From MIT, I’ve dated the right and wrong guys, and ended up with my current husband (MIT ’06; the right guy). Trust me, there are a lot of happily married Wellesley-MIT husbands and wives, thanks to you. I got to experience the fraternity life, being a “rush” girl, throwing rush week events, and taking childish jabs at other fraternities. I even lived at an MIT fraternity over a summer, as they become co-ed over the summer, and lived unofficially as a resident girlfriend during other times. You gave me the best times of my life at MIT. I got to party with people that were uncommonly witty, jovially sarcastic, and all the while had substance and big goals for their lives. It was through seeing your students working together from two o’clock a.m. to sunrise on problem sets that were almost always impossible to solve that I learned the bigger purpose in life. It’s not all about getting A’s, which is surprisingly a more random process than you might want to believe, but being able to unselfishly collaborate, share information, and come out of the experience with a memorable story to tell and a band of friends that will be secretly thinking about all the people you’ve dated while you’re saying your wedding vows.

I love you MIT for making your constituents’ lives easier and more efficient, which consequently enable us to lead a more meaningful life. I love you for hosting numerous contests to support your students in becoming innovators and entrepreneurs; this is what makes your students so attractive and why I fell in love with one of them. I love you for being an open university, literally and figuratively, providing free access to knowledge like OpenCourseWare and now edX. I love you for being out-of-the-box fun by turning a blind eye to the ingenious hacks by MIT students. Yes, I was there when a group of MIT students moved the 1.7 ton Fleming Cannon from Caltech across the country to MIT and adored it with a MIT Brass Fat ring over the cannon as if a finger; it was only after MIT notified Caltech did they realize the cannon was missing and it took them weeks to figure out how to move it back. I love you, MIT, for valuing creativity over titles or degrees. For example, hiring Joi Ito to be the director of Media Lab, who has never graduated from MIT, is recognizing creativity over titles or degrees. And that’s bold!

These are but a sampling of the myriad of reasons for my deep-seated love for you. If you only remember one thing, just know that you have touched more lives than you recognize. I love you with all my heart.

Debbie Liu is a graduate student at Harvard University.
PBE, Beta, Alpha Sig vie for fosh at Greek Griller
PBE’s probation ends. Beta, Alpha Sig recruiting their founding fathers to colonize

Frat Rush, from Page 1 which included the development of a new “open source” member education program, the full text of which is available online as part of a focus on transparency. PBE is also bringing anti-hazing “to the forefront” as it expands its anti-hazing initiative from the Greek community into clubs and sports teams, according to Galvin.

PBE went into Rush this year with only a senior class of brothers, so they were open to rushing freshmen, sophomores, and juniors. Despite this, Galvin said this rush was not much different from past rushes, since “alumni were essentially covering what we would be doing at full capacity.” The fraternity remains focused on quality, interested candidates rather than quotas, said Kyle J. Hannon ’13, because “it has expanded or recolonized 40 chapters since then.”

Galvin. The residents will move out and environmentally friendly, said founding fathers to recognize its MIT chapter, which was placed on suspension by its national organization in 2011, when members were told to move out and the chapter ceased to operate.

The recolonization effort follows a time of self-assessment for the fraternity, as the international organization realized that many of its chapters were not “operating in a manner in line with [Beta’s] principles,” according to Galvin. Development Coordinator Ryan Gee. Beta closed 50 percent of its approximately 160 chapters nationwide over the last several years, though it has expanded or recolonized 40 chapters since then.

While the original plan for the MIT chapter mentioned a fall 2013 return, Gee said that there was strong interest among alumni in having an undergraduate chapter established and in place to celebrate Beta’s MIT founding in 1913. The alumni, along with Beta international and MIT, made the decision to come back a year early.

Gee is currently staffed at MIT for a full year to recruit a group of anywhere between 15 and 40 founding fathers to recognize the chapter. The main recruitment will begin on Sept. 15 so as not to compete with Rush, said Gee, adding that Beta wants to “operate in partnership with the existing groups and the existing community.”

Like many frats claim, Beta says it will offer a different experience from other fraternities, but Gee says that there will be some concrete differences. According to Gee, Beta’s ten houses on Ray State Road will be “dry,” meaning no alcohol consumption on the premises, and there will be a strong focus on leadership development.

During the main recruitment phase, Gee will have three additional staff members on campus helping to recruit students “seeking an entrepreneurial experience” to become founding fathers, and Gee himself will remain on campus until next May, when a successor will take over for another year. Gee plans to advertise around campus, and also build relationships and networks with students in addition to working with Alpha Sigma Phi, which is also still recruiting founding fathers. The fraternity will also receive help from the IFC. “We can help our through using our system, seeing who went to some events, who declined their bids, and point them to those directions,” said IFC President Louis DeScioli ’14.

“The recruitment period will be one of “rolling bids” and founding fathers will be initiated by the end of the fall semester. “We have a couple of students that are showing strong signs of interest,” said Gee, who so far has only had one event at the Beta house. New members will be able to move into the house in Fall 2013, when the leases of the current graduate student tenants expire.

Alpha Sigma Phi came to MIT in the spring, when it sent a recruiter from its national organization to recruit founding fathers for what will become MIT’s chapter of Alpha Sig. It was successful in recruiting eight founding fathers, who are continuing to recruit to their group this fall. The group has hosted several events around campus during Rush, which were well attended, said President Cosmos Darwin ’15.

“Recruitment is going very well for us,” said Darwin. Alpha Sig plans on adding a handful of new members after Rush, which in terms of absolute numbers “will be less than most fraternities, but it will be a huge expansion for us,” said Darwin.

Triangle DeScioli also revealed during an interview that there is a new fraternity that will attempt to colonize MIT, Triangle fraternity. Triangle, which only recruits students studying engineering, architecture, math, and the sciences, is “ambitiously” planning to begin colonizing next fall, but will most likely start in Fall 2014, said DeScioli. The fraternity will be able to colonize MIT following a change in its bylaws that will allow it to include graduate students when determining the size of schools that the organization can colonize, said DeScioli.
Kendall buildings historical landmarks?

Kendall, from Page 1

MIT buildings along Main Street as historical landmarks: E38, the MIT Press bookstore at 292 Main St. (“Suitable Engraving Building”); E39, with Rebecca’s Cafe at 264 Main St. (“L.T. Hammet Building”); and E46, the Kendall clock tower building (“Kendall Square Building lust”).

But, as a member of the planning board said, “this is just throwing good money after bad.”

Dueling visions at planning board

At the meeting of the Cambridge Planning Board on Tuesday Sep. 4, MIT’s plan for its Kendall area was on the agenda. The first proposal was produced in conjunction with the Kendall Square Advisory Committee and was the result of scores of public meetings.

The board made no decisions between the two plans, but spent the time absorbing the options and becoming more familiar with them.

The second was a proposal paid for by the East Cambridge Planning Team, which is familiar with the Kendall area, and executed by CBT Architects (“CBT plan” in March). The CBT plan had previously been presented to the planning board, and the board had asked the city’s staff to try to cherry-pick the best features of both proposals and integrate them together.

The planning board vice chairman Thomas Urban, in July, both MIT representatives could provide his input.

At the end of the meeting, Anne Koch’s Main Street

One of the side issues in the city’s planning process is the new Kendall Square development project.

One criticism of the gallery has been that it is not very familiar with the Kendall area, which is a side issue in the city’s planning process.

K2 Advisory Committee Plan

K2 Advisory Committee Plan, by Goody Clancy & Associates (David Dixon, et al.)

Comparison of “dueling visions” for MIT district of Kendall Square

Differing views on Koch’s Main Street

One of the side issues in the city’s planning process is the new Kendall Square development project.

All participants in the planning process agree — from MIT to the neighbors and the public — that this project is essential to the success of the Kendall area.

Koch’s Institute is an anomalous piece of Kendall history, but it is full of social and cultural amenities. The side of the block is occupied by the Whitehead Institute and the Broad Institute, which are made up of active ground-floor uses. City Councilor Maryann Bowser has called the block “a dead zone.”

These concerns are heightened as new development takes place to the west of Koch, at 410 Main Street.

The planning board has regularly expressed how Koch should not be viewed as a dividing line for the Kendall area.

But then the board met on Sept. 4, with 15 representatives from MIT present, and the agenda did not mention Koch.

At the end of the meeting, the Koch Institute has a public gallery, open 8 a.m. — 8 p.m. weekdays and 10 a.m. — 6 p.m. weekends.

The gallery is curated by Alex Fiorentino. It is free to the public, except for a small co-ordinator.

In an interview with Firoz Farooq, director of Koch, in July, both MIT representatives could provide his input.

The Koch Institute has a public gallery, open 8 a.m. — 8 p.m. weekdays and 10 a.m. — 6 p.m. weekends. It is free to the public, except for a small registration fee.

In defense of the space

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DARE to get high?

Reefer Madness is an entertaining parody of drug prevention

By Deena Wang

A time for experimentation, college life is rife with pleasures — legal or otherwise. Those proud graduates of DARE (Drug Abuse Resistance Education) have already been introduced to the evils of drugs. Those who haven’t heard the stern warnings and strict admonitions can still be saved from the stroll down sin lane. Now, both can find a refresher course on the most pernicious gateway drug of them all.

Reefer Madness is the Musical Theatre Guild’s Fall 2012 show about the dangers of “mari-ha-wana,” based on the movie of the same name. The show has the fourth-wheel-nudging premise that the audience is watching a dramatic reenactment of “true events” at the Benjamin Harris High School, narrated by the principal-like Lecturer.

The story follows the corruption of high school students Jimmy Harper (Victor E. Carey ’14) and Mary Lane (Chehetti S. Smith ’14) — a couple so innocent, they base their love on Romeo and Juliet without knowing the play ends tragically. Under the guise of “swing dance lessons,” Jimmy is seduced by the vamp Sally Debasins (Madeleine McCord) and the Reefer dealer Jack Stone (Hubert Hwang ’07) into smoking joints, despite the warnings of Jack’s abused partner Mae Cole- man (Helen O’Keefe ’09) and Jesus (Kenneth N. Kamrin ’08). Under the influence, Jimmy’s addiction destroys his life, with disasters snowballing from the exaggerated to the pleasantly absurd.

Don’t mistake this musical for a serious treatment of marijuana. The ever-present chorus of “reefer madness, Reefer madness” adds campy emphasis to the sins the Reefer causes. Just in case you missed the moral lessons, the Placard Girl/Boy (Alecia M. Maragh ’15 and Luis Loya ’06) reminds you that “reef- er gives you a potty mouth,” amongst other things.

The musical features plenty of snappy one-liners and catchy tunes, yet the acting does not always do the script justice. Smith plays a sweet, but ultimately bland Mary Lane, and neither Smith nor Carey have stellar voices. MTG veterans Hwang and O’Keefe add more life into the relationship between Jack and Mae, especially when Mae finally resists Jack’s offer of “the stuff” she is addicted to. In a touch of irony, the moralizing Lecturer doubles as Satan, with a set of horns and glowing red eyes. Matt “Half-time” Pearson G is also to be commended for an enthusiastic background performance. As the blithe boy Ralph Wiley, Daniel J. Gonzalez ’14 puts on a good show of hallucinating.

In the end, the musical is a colossal parody of scare-em-straight approach to drug prevention.

In the end, the musical is a colossal parody of scare-em-straight approach to drug prevention. DARE, by implying that marijuana use is as dangerous as heroin, actually makes students more likely to ignore warnings and use drugs in the future.

MTG’s version is a bit rough around the edges, but still a good way to spend a weekend night.

BOOK REVIEW

Fifty shades of ignorance (rebutted one by one)

By Roberto Perez-Franco

Guy Harrison, one of the standard-bearers of the new skepticism movement, has written a book carefully classifying and then mercilessly shredding 50 very popular — and very wrong — beliefs. Ranging in topic from UFOs to the concept of biological races, this compendium of beliefs may very well be a “who’s who” (make that a cal races, this compendium of beliefs may wish it may one day serve a bigger purpose, as the basis for a composite index to measure an individual’s gullibility.

I wish it may one day serve a bigger purpose, as the basis for a composite index to measure an individual’s gullibility.

It would work like this: the respondent would be asked to consider each one of the fifty beliefs stated in the book, and select the answer that best matches their reaction: (a) “I am convinced this is true;” (b) “I guess this may be true;” or (c) “I do not think this is true.” Then you tally the answers, weigh them and spit a single index to tell you how misinformed you are.

I do have great expectations for this book: I think this is true.” Then you tally the answers, weigh them and spit a single index to tell you how misinformed you are.

I do have great expectations for this book: I wish it may one day serve a bigger purpose, as the basis for a composite index to measure an individual’s gullibility.

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I do have great expectations for this book: I wish it may one day serve a bigger purpose, as the basis for a composite index to measure an individual’s gullibility.

Five years at MIT do help you learn how to report that, out of the 50 mistaken beliefs listed in the book, 20 of them are things I never fully believed but was willing to consider as plausible at some point in the past, and only 11 are things I never ever believed to be true. So, even though none my gullibility index would be a 6, back in my teenage days I would have scored north of 0.75 out of the maximum 1.0 score. Ouch! Seven years at MIT do help you learn how to think.

In all seriousness, this is not a book you want to buy until you have browsed the table of contents. If you find yourself scoring high in the gullibility index then do yourself a favor and read the book. If, on the other hand, you find yourself thinking scornfully of the poor souls who would actually buy into these patently wrong beliefs, then this book is not for you. Just skip it. For the truth shall set you free if, and only if, you are ign。”
BOOK REVIEW

On the pillars of our craft

This into covers everything from the wheel to the design of sustainable systems

By Roberto Perez Franco

If you are reading The Tech, there is a good chance you have learned the basics of engineering at MIT. In which case, an invitation to read a book called Engineering: A Very Short Introduction might strike you as — mildly put — unnecessary. If you are the cocky type, you may even be tempted to declare, with a smile and a zinger (“Why don’t you go ask the College of Cardinals to attend Sunday school?”), that this book is not for you. But you would be wrong.

Any engineer who has spent a few years out of the classroom can benefit from reading this tiny volume.

Any engineer who has spent a few years out of the classroom (like yours truly) can benefit from reading this tiny volume as a refresher course on some basic, yet key, concepts of engineering. How pulleys can be used for mechanical advantage; the different stages of the Carnot cycle; how a turbo jet engine shares the same working cycles as a four-stroke piston engine; how electricity and magnetism interact to create movement in an electric motor; how silicon is used to make transistors, and these to make flip-flops, and these to make digital arithmetic — and computers — possible.

Even if all these fundamental ideas from key areas within major branches of engineering are still crisp in your memory, you may still benefit from the big picture that the book offers. Blockley acknowledges six divisions of engineering activity — civil, mechanical, electrical, chemical, computing, and medical — yet he structures his book along the five ages into which “the story of engineering naturally divides”: gravity, heat, electromagnetism, information, and systems. The classification of the material into these five ages works wonderfully as a didactic mechanism.

It is only when the author himself deviates from his proposed structure that the book seems to lose steam. In particular, Chapter two, nominally on the age of gravity, is severely weakened by an unnecessarily long journey into the history of philosophy and science that consumes one-tenth of the whole book and leaves out precious gravity-related material, while pushing other details into the next chapter. With this exception, the rest of the content adheres to the structure, to great effect.

The price of the book is more than covered by chapter six alone, on the age of systems, which deals with a subject dear to the heart of those at MIT’s Engineering Systems Division: complex sociotechnical systems. This chapter on systems crowns the book and left me with a deeper understanding of why systems thinking is, or should be, the new way of doing engineering — not only because the fruits of our previous engineering efforts have grown to a level of complexity such that they have started to exhibit unexpected behaviors, but because the stakes are now higher than ever. After discussing risk in systems like nuclear plants and the power grid, Blockley goes to the heart of the matter: The defining test is climate change, where such high stakes affect our very future. “Engineers have to deliver sustainable systems,” he advises, “making systems durable, repairable, adaptable, robust and resilient.”

As one who works within this field, all I can say is “Amen, brother! Amen.”

2012-13 VISITING ARTISTS PROGRAM

MEL CHIN AND RICK LOWE
Artists and Community Planning
Presentation: September 24, 7:00 PM | Bartos Theater

VIK MUNIZ
Waste Land Screening: October 2, 6:30 PM | E14 Little Theater
Presentation: October 3, 6:30 PM | Bartos Theater

JOHN AKOMFRAH AND LINA GOPAUL
Handsworth Songs Screening: October 29, 7:00 PM | Bartos Theater
The Nine Muses Screening & Discussion: October 30, 7:00 PM | ACT Cube

DON BYRON
Gospel Concert: October 27, 7:30 PM | Kresge
MIT Wind Ensemble Concert: March 16, 8:00 PM | Kresge

TOMÁS SARACENO
MIT Center for Art, Science & Technology Visiting Artist
Moving Beyond Materiality Panel Discussion: November 15, 6:30 PM | SA+P Long Lounge

GUILHERME MARCONDES
Animation Demo & Discussion: January 24, 5:00 PM | MIT Museum

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Alcator C-Mod may lose funds in favor of ITER

Largest experiment at MIT would be shut down if federal budget changes as proposed

The heads of DIII-D, Alcator C-Mod, and NSTX told Nature for the journal’s July article that all three sites contribute uniquely to science and preliminary research for ITER.

They have also argued that a strong domestic fusion energy presence will be necessary to benefit from ITER results.

“We must be training the next generation of fusion scientists and engineers, which requires our unique domestic facilities to perform the research, if we hope to be ‘building’ fusion power plants in the future rather than ‘buying’ them from China or Europe. Sacrificing the domestic program for ITER makes no sense,” says Hartwig.

The ITER budget has nearly quintupled since the U.S. became an ITER partner, said Hartwig, and at the time the DOE and “the U.S. fusion community” agreed that funds would not be siphoned from domestic programs to support ITER.

Alcator C-Mod is the single largest experiment at MIT, according to http://fusionfuture.org, which was started by graduate students to campaign against funding cuts. According to Hartwig, it's the largest in terms of both of funding and number of people employed. Alcator C-Mod supports about 120 people directly, including scientists, professors, students, and technical staff. The grant money also supports the equivalent of about 100 MIT staff and another 80 full-time jobs from subcontracting.

Supporters of the domestic fusion program foresee serious consequences if Congress decides to wind down Alcator C-Mod in FY 2013. Hartwig worries that MIT’s plasma physics group will disappear. Hartwig also echoes fusionfuture.org’s warning that “without an increase in funding, the domestic fusion program will be effectively eliminated to pay for ITER.”

Solution to Techdoku II

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Far from 'junk,' DNA dark matter crucial to health

ENCODE project, successor of Human Genome Project, results like 'Google maps' of DNA

By Gina Kolata

Among the many mysteries of human biology is why complex diseases like diabetes, high blood pressure and psychiatric disorders are so difficult to predict and, often, to treat. An equally perplexing puzzle is why one individual gets a disease like cancer or depression, while an identical twin remains perfectly healthy.

Now scientists have discovered a vital clue to unraveling these riddles. The human genome is packed with at least four million gene switches that reside in bits of DNA that once were dismissed as "junk" but that turn out to play critical roles in controlling how cells, organs and other tissues behave. The discovery, considered a major medical and scientific breakthrough, has enormous implications for human health because many complex diseases appear to be caused by tiny changes in hundreds of gene switches.

The findings are the fruit of an immense federal project, involving 440 scientists from 32 labs around the world. As they delved into the junk — parts of the DNA that are not actual genes containing instructions for proteins — they discovered it is not junk at all. At least 80 percent of it is active and needed.

The result is an annotated road map of much of this junk, showing what it is doing and how it interacts with the system of switches that, acting like dimmer switches for lights, control which genes are used in a cell — and even to what degree.

"People have trouble digesting it," said Eric Lander, president and founding director of the Broad Institute of Harvard and the Massachusetts Institute of Technology. Its predecessor, the Human Genome Project, which determined the entire sequence of human DNA, "was like getting a picture of a distant star from space," he said. "It doesn't tell you where the roads are, or even where the towns are."

"The new result is 'a stunning resource,'" said Lander, who was not involved in the research that produced it but was a leader in the Human Genome Project. "My head爆炸s at the amount of data." The discoveries were published Wednesday in six papers in the journal Nature and in 24 papers in Genome Research and Genome Biology. In addition, The Journal of Biological Chemistry is publishing six review articles and Science is publishing yet another article.

"Human DNA is a lot more active than we expected, and there are a lot more things happening than we expected," said Ewan Birney of the European Molecular Biology Laboratory-European Bioinformatics Institute, a lead researcher on the project.

In one of the Nature papers, researchers link the gene switches to a range of human diseases — multiple sclerosis, lupus, rheumatoid arthritis, Crohn's disease, colitis disease — and even to traits like height. In large studies over the past decade, scientists found that minor changes in human DNA sequences increase risk that a person will get those diseases. But those changes were in the junk, now often referred to as dark matter, they were not changes in genes — and it was not clear what significance their was. The new analysis reveals that a great many of those changes alter gene switches and are highly significant.

"Most of the changes that affect disease don't lie in the genes them-selves, they lie in the switches," said Michael Snyder, a Stanford University researcher for the project, called ENCODE, for Encyclopedia of DNA Elements.

And that, said Dr. Bradley Bernstein, an ENCODE researcher at Massachusetts General Hospital, "is a really big deal." He added, "I don't think anyone predicted that would be the case."

The discoveries also can reveal which genetic changes are important in cancer, and why. As they began determining the DNA sequences of cancer cells, researchers found that most of the thousands of DNA changes in cancer cells are not in genes, they are in the dark matter, the junk. The challenge is to figure out which of those dark matter switches and then how to turn them off to stop a cancer's growth.

"These markers are very signifi-cant," said Dr. Mark A. Rubin, a prostate cancer genomics researcher at Weill Cornell Medical College. Rubin, who was not part of the ENCODE project, added, "They will definitely have an impact on our medical research on cancer."

The project began in 2003, as researchers began to appreciate how little they really knew about human DNA.

In prostate cancer, for example, his group found mutations in im-portant genes that are not readily attacked by drugs. But ENCODE, by showing which regions of the dark matter control those genes, gives another way to attack them: Target those controlling switches.

Rubin, who also used the Google mapping technology, explained: "You can follow the roads and see the traffic circulation. That's exactly the traffic we will use to navigate the cancer genome."

ENCODE provides a road map with traffic patterns for alternate ways to go after cancer genes, he said.

Bernstein said, "This is a re-source, like the human genome, that will drive science forward."

The system is stunningly complex, with dozens of redundant, but the idea of so many switches was almost incomprehensible, Bernstein said.

"People have trouble digesting the concept," he added. "You need to have a million switches to control 1,000 genes."

There also is a sort of DNA wiring system that is almost incompletely understood.

"It is like opening a wiring closet and seeing a hairball of wires," said Mark Gerstein, an ENCODE researcher from Yale. "We tried to unravel this hairball, and make it interpretable."

There is another sort of hairball as well. the complex three-dimensional structure of human DNA is such a long strand — about 4 feet — that it could not fit in a single microscopic nucleus of a cell that it fits only because it tightly wound around dozens of DNA "coiling bodies" that looked like the three-dimensional tubes that genes were seen in DNA. The ENCODE researchers discovered that small segments of dark-matter DNA are often quite close to genes they control. In the past, when they analyzed only a small length of DNA, those controlling regions appeared to be far from the genes they affect.

The project began in 2003, as researchers began to appreciate how little they really knew about human DNA.

In recent years, some began to find switches in the 99 percent of human DNA that is not genes, but they still could not fully characterize or explain what a vast majority of it was doing. By the time the National Institutes of Health, the project's over-sight body, had assembled its first, 150-author team, "The idea was that we had a flotilla of papers," Gerstein said.

But, he added, more work has yet to be done — there still are parts of the genome that have not been fig-gured out.

That, though, is for the next stage of ENCODE.
Unnatural Selection by Meisel, Tonn, and Wang

UPPERCUT by Steve Sullivan

Sudoku Solution, page 6

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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 I Solution, page 6

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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.
by Randall Munroe

some rappers brag too much!!

That’s right! I said it!

Some subjects!

Let’s have songs about REAL LIFE:

Raps about running out of salt and

thinking “Wow, when was the last time

I bought salt?”; raps about thinking

how ridiculous it is to have to buy

salt when it’s in the oceans for

free. Raps about considering if

you could take extra salt off

the sidewalk in winter

and save it that way.

Is it edible?

It’s all salt, right? If

it’s dirty, I could wash it.

I mean, it would dissolve,

but then I could evaporate

that water and recover

the salt.

T-Rex, do you... want some salt?

No man, I got this.

(© 2012 Ryan North)

[50] Fara plans
[52] Knock it off
[53] 16 Benjamin
[54] Place to stay

[55] Opposite of paleo-
[56] Winery buy
[57] Savings plan, for short
[58] One way to sway

50 Fare plans
52 Knock it off
53 16 Benjamin
54 Place to stay

55 Opposite of paleo-
56 Winery buy
57 Savings plan, for short
58 One way to sway

by Ryan North

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AY DINOSAUR COMICS
by Randall Munroe

some rappers brag too much!!

That’s right! I said it!

Some subjects!

Early hip-hop was more concerned
with how

fun it was to be rapping to the beat,

and with assuring us that what we

were hearing

was not a test.

I miss those days!

You miss one song in
particular that you
listened to twice a day
really loud?

TRUE. But I miss it
when it’s not those
times when
I do that!

So what do you want
raps about?
New subjects!

[1104] Feathers

WHAT ARE YOU
READING ABOUT?

DINOSAURS!

OH, YEAH.

YAY!

THEY’VE GOTTEN ALL THE

GOOD JOBS

BECAUSE

THEY

USED TO BE ASEXUAL.

BUT NOW THEY ALL HAVE

DOUDY TEARSORS, RIGHT?

THIS UMP SAYS YOU THINK

RAPERS SHOULD USE A

STABILIZER TO STAY ON

TOP OF THEIR

PREY WHILE HANGING ON WITH

THEIR

HOOKED CLAWS AND DRAG IT ALIVE.

[Laughter of xkcd.com and click to see a video of a modern bird using stability flapping during predatory motion. It’s all true!]
Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–9. Follow the mathematical operations for each box.

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<th>72×</th>
<th>8</th>
<th>26+</th>
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<th>7</th>
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</tr>
</thead>
<tbody>
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</tbody>
</table>

by Jorge Cham

**Techdoku II**

Solution, page 11
The Giants come off last year's Super Bowl win with basically the same roster, so they should have a competitive team. Victor Cruz will lead a secondary. The Eagles should return to their division. However, they will still have difficulty reaching the playoffs again this year with Tony Romo at the helm.

To counter all the great wide receivers in the East, Dallas improved their pass defense by signing Brandon Flowers. With the emergence of Demarcus Murray and Dez Bryant, the Cowboys should return with an explosive offense next season. However, they will still have difficulty reaching the playoffs again this year with Tony Romo at the helm.

Finally, Washington enters the season with the highly touted second overall pick, Robert Griffin III. The Redskins have been a revolving door for quarterbacks lately, with Donovan McNabb and Rex Grossman the most recent culprits of subpar QB play. Some are skeptical and believe RGIII will bring the same inexperience as those in the past, but the Redskins should at least be able to improve on last year's abysmal season. With a talented defense led by Brian Orakpo, they should be able to scrape together at least eight wins.

The Vikings are a mess. Star running back Adrian Peterson is coming off a devastating knee injury which resulted in a rear in his ACL and MCL. There is no telling if he will ever return to his form of years past. Christian Ponder showed signs of promise last season, but he hasn’t appeared ready to lead a playoff team. This will be a rebuilding year for Minnesota.

The Green Bay Packers are a perennial favorite to win the NFC, and this year is no different. As long as Aaron Rodgers is at the helm, Green Bay will be able to compete. Even though they finished last season at 15-1, their early playoff exit to the Giants was very disappointing. Expect them to learn from their mistakes and advance deeper this year.

Last season, the Bears were cruising. They were on their way to the playoffs and looked like a formidable team in the NFC. Then, Jay Cutler broke his thumb and missed the rest of the season. Chicago still has the same great defense they had last year, and with the addition of Brandon Marshall, the Bears get the superior wide receiver they’ve desperately needed to handle Jay Cutler’s cannon of an arm. They should reach the playoffs with ease this year.

Although Detroit was one of the surprise teams last year, they shouldn’t have caught the NFC off guard. It was Matt Stafford’s first healthy season in the NFL and Calvin Johnson is the most physically gifted receiver in the league. They have also built an incredibly talented defensive line anchored by Ndamukong Suh and Nick Fairley. They will regress slightly this season, but as long as Stafford stays healthy, they still have a playoff caliber roster.

The Falcons sport one of the best offenses in the NFL with Jones and Roddy White. Every year, there are teams that surprise everyone and take the NFL by storm. Last season, Cincinnati and Detroit greatly improved on their previous records and even made the playoffs. This season, the Cam Newton-led Panthers look to be that unexpected contender. After improving last year due to Newton’s outstanding rookie campaign and Steve Smith’s resurgence, Carolina should ride their momentum into this season and contend for a playoff position. They might even make it to the Super Bowl.

The Giants are a confusing team. Two years ago, rookie QB Eli Freeman led them to a very promising 10 win season and it looked as though the team was regaining their championship caliber play they showed in the early 2000s. Freeman suffered a major sophomore slump last season, however, and the Giants fell to four wins, never establishing themselves as a factor in the tough NFC South. Their problem constantly comes back to the lack of offensive firepower, and until they can sign or draft some play makers, they will continue to be the bottom feeders of the division.

By Austin Osborne

PACKERS AND 49ERS EXPECTED TO GO FAR THIS SEASON

The Packers are a team that is proven to have depth and talent at every position. They should compete with the rest of the NFC and at least make it to the playoffs.

The 49ers have improved their roster by drafting some play makers, they will probably be the NFC West champions this season. With one of the most tenacious defenses in the NFL, the 49ers will rack up plenty of sacks this season from Justin and Aldon Smith. Randy Moss is a positive acquisition for the 49ers, but it shouldn’t greatly change their offensive production.

The Seahawks signed Matt Flynn in the offseason, presumably to be their quarterback of the future. However, after the pre-season, coach Pete Carroll named third round pick Russell Wilson the starter. Wilson shows potential, but the team just doesn’t have enough to reach the playoffs, even in a weak division.

The Bums continue trying to re-catch their past glory from the early 2000s behind QB Sam Bradford and RB Steven Jackson, but they just don’t have enough talent on either side of the ball to compete on a consistent basis. They have a good young roster so they will be relevant again in the near future.

Arizona has a quarterback battle brewing between Kevin Kolb and John Skelton, but it shouldn’t matter who wins out. The Cardinals’ rush defense is lacking and the NFC West is full of running backs running back up and down the field. Even with a great wide receiver like Larry Fitzgerald, Arizona needs someone to get him the ball, and they won’t succeed until they do.