

# Phyo Kyaw '10 killed by truck in traffic accident

By **Ethan A. Solomon**  
EDITOR IN CHIEF

Phyo N. Kyaw '10, 23, was killed on Dec. 27 after he was hit by a truck while riding his bicycle at the intersection of Vassar Street and Massachusetts Avenue.

At around 7:40 p.m., an oil tanker truck was turning from Mass.

Ave. onto Vassar St. heading towards Main St. when it hit Kyaw. He was transported to a hospital where he was pronounced dead.

A blue bicycle could be seen crushed under the truck's wheels in a video report from Boston's *7 News*.

Kyaw graduated MIT in 2010 with a bachelor's in chemical-biological engineering, Course 10B. He was from Yangon, in the Southeast Asian nation of Myanmar.

According to the MIT News Office, Kyaw was a member of the Sigma Nu fraternity and involved in Camp Kesem, a summer program for children with a parent who has died of cancer. After graduating, he worked as a research scientist at Cambridge-based Soane Labs.

Kyaw's death sparked an out-

**INSIDE**  
Coverage of intersection safety. **p.12**



Flowers and candles lay before a ghost bike memorial dedicated to Phyo Kyaw '10. Kyaw was hit and killed by a truck while riding his bicycle on December 27.

TIFFANY HUANG—THE TECH

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SOURCE:FACEBOOK

## The frosh are coming! 680 admitted early to Class of 2016

680 of 6,008 Early Action applications (11.3 percent) received an early holiday present when they were admitted to the Class of 2016 on Dec. 17, 2011. 3,731 applicants (62.1 percent) were deferred to Regular Action while 1,308 students (21.8 percent) were not offered admission. 289 students withdrew or did not complete their application.

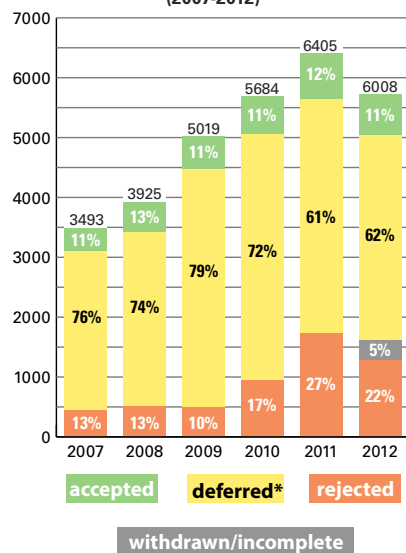
This cycle's EA acceptance rate was 11.3 percent, down 0.8 percent from last year rate. Past years' results have hovered around 11 percent; the admit rates for the classes of 2013, 2014, and 2014 were 10.8 percent, 10.3 percent, and 12.1 percent, respectively.

The 6,008 applications that were received marked a five percent decrease from a peak of 6405 early applications last

year. Several other institutions also saw a reduction in early application volume. Yale received 18 percent fewer Single Choice Early Action (SCEA) applications than last year, while Columbia's volume of Early Decision applications decreased six percent. These declines may have been caused by the reinstatement of SCEA programs at Princeton and Harvard that took effect this year for the first time since being abolished in 2006. SCEA applicants to Harvard and Princeton cannot apply early to any other private institutions. In contrast, MIT's EA program is nonrestrictive and allows applications to apply early to other universities as well. Regular decisions for MIT admission come out in March.

—Jaya Narain

MIT early action trends  
(2007-2012)



INFOGRAPHIC BY SARAH RITTER—THE TECH

## MIT to build online education platform

MITx offers online courses & certificates

By **Ethan A. Solomon**  
EDITOR IN CHIEF

MIT is developing an online educational platform that will be open-source, largely free, and let users outside of MIT earn certificates for completing Institute-caliber courses online. MIT hopes the initiative, internally dubbed "MITx," will change the way students learn on-campus — by incorporating elements of MITx into existing curricula — and push MIT's educational reach beyond campus borders in a way the current OpenCourseWare (OCW) cannot.

According to MIT Provost L. Rafael Reif, who announced the project on Dec. 19, "it's safe to say that MIT faculty want to offer students the best residential education. Nowadays, it looks like more and more, that's going to mean integrating online technologies into the campus experience." Reif has been spearheading the MITx initiative.

By doing "knowledge transfer" online through MITx, says Reif, "students come to a classroom or lab to do more of the enriching experiences they come to a campus for." With MITx as the basis for teaching on campus, he says, MIT anticipates other types of learning that cannot be done online will increase, like laboratories and UROP, among

other faculty-student "face-to-face" interactions.

But MIT will offer the same online learning experience to the rest of the world as well, says Reif. "If we're going to do the best job we can for our campus, why don't we make that available to the whole world? So that everybody can have access to these learning tools, and if you can handle the learning of the MIT-quality of the material, you should just go after it and try."

Users will have the option of getting an MITx "certificate" by successfully completing a course online, though it will cost a "modest" fee, says Reif. Otherwise, they may use the service free-of-charge.

"If you're taking a course, if you're just exploring, you want to learn by yourself, and you don't really care that [you] can show a piece of paper that says you learned, that's free," says Reif.

MITx will serve two additional goals. The software platform that delivers MIT content will be open-source, meaning other institutions — like universities and high schools — could use the technology to offer their own courses. MITx will also serve as a "laboratory" for MIT to experiment with online learning techniques, while collecting data from

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OMARI STEPHENS—THE TECH

Ray Gelinas of Canning Studios uses a roller to paint the ceiling of Lobby 10 during a restoration project planned to be completed before February. Canning Studios founder John Canning explained that the group took a sample of the ceiling, analyzed it, and used the analysis to determine the original colors of the ceiling to the best of their ability. Canning emphasized that the green color of the ceiling provides a natural complement to the color of the bronze chandeliers.

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## STATE OF THE RACE

## Romney is the nominee

There's no doubt about it

By Keith Yost

STAFF COLUMNIST

In October, State of the Race declared Mitt Romney the heavy favorite to become the Republican 2012 candidate for president of the United States. Since then, much has changed in the Republican field, but the most important change is this: Mitt Romney is no longer the heavy favorite to become the Republican nominee; he is the prohibitive favorite. His polling numbers against other candidates, his polling numbers against Obama, his institutional support, his campaign funding, his superior organization, his wins in Iowa and New Hampshire, and the political positioning and messaging of his campaign have given him a virtual lock on the nomination.

Only one or two candidates yet remaining in the race are even plausible challengers. The first, Rick Perry, ended his surge by delivering disastrous debate performances and has since had miserable showings in both Iowa and New Hampshire. Unless he manages to stabilize with a strong showing in South Carolina, his campaign funding and volunteer pool will dry up and his bid will be over. The arguable second, Jon Huntsman, never even got so far as a surge, and will soon depart after failing to notch a win in New Hampshire.

The remainder of the field has no conceivable path to victory. Rick Santorum, Newt Gingrich, and Ron Paul are each seriously flawed candidates, and largely disliked by Republicans as a whole.

To borrow a phrase from Rich Galen, Ron Paul's "stop-signs-are-a-violation-of-my-fifth-amendment-rights" brand of libertarianism may find appeal with some, but to the majority of Republicans his extremism is deeply unsettling. In a Gallup poll, 62 percent of GOP respondents said he was an "unacceptable" candidate, putting a hard ceiling on the fraction of the vote he could ever receive.

Rick Santorum suffers from a similar problem — to extreme social conservatives, his pronouncements against homosexuality and his promises to ban pornography elicit strong support. But to most (including his home state of Pennsylvania, where he lost his senate seat by the widest margin ever achieved by a Republican senator), his Catholic fervor is off-putting. Like Paul, Rick

Santorum has a hard cap on the fraction of support he can muster (only 27 percent considered him acceptable in the same Gallup poll). Even if it were possible to raise his ceiling, Santorum's lack of organization, funding, and political temperament work against this prospect.

### Rick Santorum, Newt Gingrich, and Ron Paul are each seriously flawed candidates, and largely disliked by Republicans as a whole.

The response by the conservative establishment to the candidacy of Newt Gingrich is best described in a tweet by the decidedly non-establishment Will Wilkinson: "If Newt Gingrich becomes president, we all deserve to die in a purifying fire." As Newt's star rose, a progression of party leaders, elder statesmen, and ideological luminaries went on the airwaves to express their horror that a man as cruel, egotistical, and incoherent as Newt Gingrich could ever become the party's nominee. To summarize the laundry list of reasons why their characterizations of Newt are fair would take a full article of its own. Suffice it to say they are effective — in three short weeks, his polling numbers in Iowa went from 31 percent to less than 14 percent, a drop even more precipitous than that of Herman Cain. Expect this performance to be repeated in any state in which the voters have temporarily confused Newt for a passable candidate.

Some pundits counter by claiming that Mitt Romney suffers from a ceiling as well. It is hard to understand why they think that this is so. Romney may not be the first choice of Tea Partiers or evangelical Christians, but it is unclear that he is viewed very negatively either — a majority of Republican voters report that Romney is an acceptable candidate, and the results of Iowa suggest Romney is capable of picking up a respectable piece of any of the Republican party's factions. If the field winnows to just Romney and a more conservative opponent, there is no reason to think Romney would not win every contest 60-30 (I'll credit the immortal Dr. Paul with a con-

sistent 10 percent). Moreover, Romney's appeal to moderates, independents, and other groups that are typically under-represented at party primaries suggests that he would have an easier time working around a ceiling in his support through get-out-the-vote efforts.

This is not to say that Mitt Romney is unbeatable — it is merely to say that none of the current field are in any position to beat him. Were a new challenger to throw their hat in the ring — say a Mitch Daniels or Paul Ryan — the 2012 nomination contest could once again become competitive. This is why, however, the difference between heavy favorite and prohibitive favorite is an important distinction.

To enter the presidential race now is to risk having one's political career ended by a talented campaigner who has no shortage of money, manpower, and support among party leaders. Each gaffe made would be amplified and broadcast nationwide, every piece of the candidate's past would be picked up and examined by a hyperbolic media. This risk is out-of-balance with the likelihood of reward. Even if a new candidate joined the race today, the filing deadlines to compete for 40.3 percent of the race's elected delegates would have already passed. Romney would enter March 6's "Super Tuesday" elections with victories in all, or perhaps all but one of the previous primaries and caucuses. And while funding, organization, and media attention might come easily to a new "non-Romney," those assets are unlikely to outdo what Romney has already amassed in his long-standing bid for the presidency. It would be an uphill battle all of the way, and at the end of the long slog wouldn't even be the presidency — it would be another grueling, uphill battle against an even better funded, better organized, more talented opponent.

There are three ways in which Romney might be defeated. If Rick Perry were to catch a miracle in South Carolina and then run a flawless campaign, Romney could lose. If a new challenger took a long shot gamble and won, Romney could lose. And if Romney himself made a disastrous miss-step, he could lose. But collectively, the odds of any of these happening are less than five percent. With two-sigma certainty, Mitt Romney will be the Republican presidential candidate of 2012.

## Reflections from the campaign trail

Days before the NH primary, an observer delves into the fray

By Jacob London

"It was just before midnight when I left Cambridge and headed north on U.S. 93 toward Manchester ... back on the Campaign Trail ..." So began Hunter S. Thompson's legendary coverage of the New Hampshire primary in "Fear and Loath-

ing," the 1972 Rolling Stone essay that changed political journalism forever.

It was just before noon, 40 years later on an unusually balmy January day, when I embarked on the same journey, and headed out of Cambridge on the road that had taken Thompson to Manchester. Craving more than the usual talking points

and stump speeches, I was in search of a feeling, an impulse, a presence. More importantly, I wanted to witness the beauty of active democratic participation, in a state where the candidates were accessible to any citizen who wanted to talk to

London, Page 5

## CORRECTIONS

A Dec. 9 Campus Life article about coffee facts plagiarized from several online sources. Some of the wording found in this article is identical to content from cocoajava.com, cofei.com, and bp.com, though this list is not necessarily exclusive; there is no clear original source of this content. These sources are not

credited in the article. Other facts in this article very closely follow the structure of coffee facts presented in a webcomic on theatmeal.com, which is also not credited.

*The Tech* handles instances of plagiarism seriously. According to *The Tech's* staff policies, the newspaper's Managing Board will review this incident of plagiarism at a February meeting. This note may be updated to reflect the outcome of that meeting.

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# PUPPIES!!!

Students wind down outside of Hayden Library during finals week with dogs from Dog B.O.N.E.S., a non-profit therapy dog organization. The event, which attracted many students, was hosted by MIT Libraries.



CHRISTOPHER A. MAYNOR—THE TECH



CHRISTOPHER A. MAYNOR—THE TECH



CHRISTOPHER A. MAYNOR—THE TECH



CHRISTOPHER A. MAYNOR—THE TECH

# New content will be designed specifically for MITx

MITx, from Page 1

a large user base.

## What exactly is MITx?

What exactly will MITx be? How will users — either at MIT or across the planet — go about completing a course online?

MITx draws on a decade of educational software development since OpenCourseWare began in 2001, says Anant Agarwal, head of MIT's CSAIL Artificial Intelligence Laboratory and professor of electrical engineering and computer science. Agarwal has been leading the development of the platform.

Some departments at MIT have been using online technology in courses they already offer, like Courses 6, 8, and 18, says Agarwal. For instance, Prof. Robert C. Miller in CSAIL has crowdsourced grading of coding assignments by letting qualified users on the web make comments on students' homework. Agarwal also cited the iLabs project, which lets students remotely conduct experiments in real laboratories — not simulations.

MITx aims to combine the output of efforts like those in a single place.

"Can we pull together a lot of these technologies into a coherent platform — something we can open-source — and make it freely available to everybody in the world?" said Agarwal.

Like OCW, MITx will probably feature video-based instruction. But unlike OCW, MITx videos will be designed for the web, and may feature some kind of interactive element — students, for example, could respond to questions posed by the lecturer and see immediately whether they were right or wrong. That also means that most videos currently on OCW would have to be redone for MITx.

In an even bigger leap from what OCW currently offers, the new system will ask users to complete exams and assignments online. Students would be graded automatically.

"The idea, to get it to scale, is to really take out human graders," said Agarwal.

Automatic grading does have costs, however. Manual graders at MIT often award points through partial credit, recognizing that a student has the right approach, but may have gotten the final answer wrong. Agarwal says that online problem sets would be designed with partial credit in mind — large problems would be broken up into several steps, with credit awarded at each. Mistakes made at one step would not necessarily mean students would lose credit at subsequent ones.

But some questions ask students to solve problems in a freer, creative way, without step-by-step guidance.

"If you truly do have a free-form problem, I think that's a very interesting research questions where you don't want to guide the student down a particular path. ... You want to see what creative things they can do," said the CSAIL professor. "That is an open research question. I'd love to have my colleagues in machine learning technologies ... work on problems like this. I think it's hard."

## MITx certification

MITx will charge users who want to get a certification of completion for a course. Certificates would be awarded if users "show that they master the subject," said the provost. "That has to be a stringent requirement of mastering it the way an MIT student would."

Employers could someday see MITx certificates as desirable in applicants, said the Provost. He said it would be "premature" to say how MIT would treat certificates earned by high school students who later attend MIT.

Agarwal and Reif stressed that certificates would be awarded by MITx — not MIT — and that a certificate would mean something different than an MIT degree.

"MITx will offer a completely different educational experience — its online, it's automated, minimizing human participation and so forth," said Reif.

"There's a clear separate brand — it's MITx," added Agarwal.

But whether the Institute will stick with the MITx name is unclear. At December's faculty meeting, President Susan J. Hockfield said

## Faculty involvement

Chair of the Faculty Samuel M. Allen PhD '75 says the MITx initiative has seen widespread support among faculty, but some have voiced concerns about details that have not been worked out yet. A more definitive faculty opinion might be revealed at a forum on the topic in late January.

Last month's faculty meeting,

more effort is going to have to be put on how people interact with the community of students on campus. I don't know how you would do it, but it's something that I feel — to put it boldly — is something MIT's long-term future depends on," Allen said. "We have to further develop and distinguish the residential experience and justify the value of that experience as an alternative to something

by the idea of being a part of something new and potentially revolutionary, as well as the opportunity to contribute to education worldwide.

## Inception and further development of MITx

Reif says that brainstorming for the MITx project has been happening for about four years, but it was about a year-and-a-half ago that he asked two committees, the MIT Online Study Group and the MIT Council on Educational Technology (MITCET), to come up with ideas about what an online MIT education would look like. Broadly speaking, MITCET considered how online technology could be incorporated into on-campus education, and the Online Study Group considered such systems in the context of the rest of the world.

The provost added that it was not one committee which ultimately formulated MITx. In addition to the Online Study Group and MITCET, he says MITx reflects years of development on OCW and online learning initiatives pursued by individual departments at MIT.

Michael E. Plasmeier '13 has been the undergraduate representative on MITCET since the beginning of last term. He says that Reif gave the group a presentation on the general goals of MITx on Nov. 28, followed-up by a presentation with more details on Dec. 16 — about two days before the official MITx announcement. After the Nov. 28 meeting, MITCET committee members were asked to provide feedback via a wiki or by emailing the provost.

In addition to meeting with MITCET and the Faculty Policy Committee (both of which have student representation), the provost met with focus groups of graduate and undergraduate students organized by Chancellor Eric Grimson PhD '80. "They asked all the right questions: will MITx increase the load on our faculty, how will we know who is the person taking the MITx test(s), will MITx weaken the value of an MIT degree, etc.," said Reif in an email to *The Tech*.

"From my behind-the-scenes perspective, a lot of faculty were engaged with it, but not in a very public way," said Allen of the faculty's role in MITx development. "I think many people felt there was a sense of urgency with regards to making an announcement — I think that urgency was well-founded."

Plasmeier agreed. "External factors" contributed to the timing of the announcement, he said. "It's still not very concrete ... and there's still a lot of details to be refined."

Indeed, other institutions have been pursuing online educational initiatives. Last fall, Stanford University offered three computer science courses online for free (the machine learning course was taught by Andrew Ng SM '98). Stanford also offers lecture videos for nine additional computer science classes via their OpenClassroom platform, similar to OCW.

Looking ahead, Plasmeier says that he expects MITx to be adopted by faculty on an experimental basis. "We'll see this slow progression of semester-by-semester, class-by-class, professors will try something out and solicit student feedback on it," he said.

Professors will determine for themselves whether the new online tools work, Plasmeier added. If data shows that learning outcomes aren't any better with MITx, instructors could decide to revert back to traditional methods.

"We shouldn't be afraid of researching new methods to see if there is something better than the standard lecture-based classes," he added.

An MITx prototype will deploy with about one course next semester, says Agarwal. Once the platform is stable, MIT will release the software open-source. A "handful" of courses are expected to be added next fall, with growth beyond that dependent on demand from learners and available faculty resources, Agarwal said.

## MITx is...

### NEW

Content for MITx will be mostly brand new and designed specifically for the platform. Even video lectures will probably need to be re-done for MITx.

### INTERACTIVE

Completing a course on MITx involves completing assignments and exams, receiving grades and getting feedback.

### MOSTLY FREE

Details haven't been entirely worked out yet, but most of the educational material will be accessible to any user free of charge, unless they want to get an MITx certificate. In that case, users will pay a "modest" fee.

### MULTI-PRONGED

MIT has two goals for MITx: 1) supplement the residential learning experience for students on campus, and 2) bring online educational offerings to the rest of the world.

### MORE WORK FOR FACULTY

The provost likens building an MITx course to writing a textbook. But faculty also stand to get a share of the revenue generated by their courses.

### A PLATFORM

MIT hopes other institutions will use the open-source software that runs MITx to offer their own courses online.

All of this isn't to say there will be no connection between MITx and OCW. In an email sent to OCW supporters, OCW Executive Director Cecilia d'Oliveira said, "OCW will also be enriched by the materials created for MITx programs, which will be shared openly on the OCW site." She also noted that MIT remains fully invested in OCW, and OCW will "continue to be MIT's free and open effort to share the curriculum used at MIT."

And it can also be expected that MITx courses will draw heavily on what professors actually teach here at the Institute, so content found on a course's OCW page might be very similar to content found in an analogous course on MITx.

## OCW is...

### A PUBLICATION OF MIT COURSE MATERIALS

Courses on OCW have been designed for students at MIT, and not for a particular online learning initiative. OCW simply makes the materials from regular MIT courses accessible online.

### MOSTLY STATIC

Students do not complete assignments or exams on OCW, but may view assignments and exams that were once taken by real students. Students do not get grades from OCW, nor do they receive feedback on their progress in learning course material.

### BROAD

Virtually any course can be published on OCW. MITx, on the other hand, will only have courses that are designed for the platform.

### EASY FOR FACULTY

Once a course has been taught at MIT, it's relatively easy to publish it on OCW. An MITx course, however, will need to be newly designed with online learning objectives in mind.

### NOT CERTIFICATE GRANTING

OCW cannot, in the traditional sense, substitute for actually taking a course.

that "some of us have great hopes that the name will change."

The provost could not say what the certificate fee would be, but he said it would be "affordable" and suggested the meaning of "affordability" might be different depending on the user.

"What a definition of 'affordable' can mean, we'd be speculating right now. Maybe worth a week of wages of the median income of people in [the user's] country. We'd have to think about something like that."

Nonetheless, the plan is for MITx to be self-sustaining. In addition to revenue generated by certificate-seekers, MIT would also seek corporate donations. Reif did not rule out alternative forms of revenue generation to be considered as the platform evolves.

In the meantime, MIT "is investing in the few millions" of dollars for the MITx prototype, which will launch with "on the order of" a single course this spring, Agarwal said. What that course will be is still unclear.

MITx is expected to be profitable, according to the Provost, but he says its intention is not moneymaking. "We think it's important to complete these two goals ... to improve what we do on campus, and to offer this for the world. That's a very important goal. The driver is not money," said Reif.

The provost also "anticipates" that net revenue would be shared with faculty, though it is not yet clear how that scheme will work.

held two days after the MITx announcement, was "extremely well attended" despite the upcoming holiday, said Allen. "I think people want to hear more details from the provost about what exactly is being envisioned and what the commitment of faculty energy will be to it."

Allen's personal interest in MITx revolves around its potential to change the face of a residential education. If online resources become more effective at delivering information, he asks, "will there be a point where people begin to lose interest in the investment in the residential learning experience?"

The form of a residential, MITx-supplemented education is also not yet clear. Faculty who come to rely on online technology to teach courses may find themselves with substantially more time — but what they do with that time is up for debate. Allen and the provost hope professors will use it to try out nontraditional teaching methods.

"I'd like to work with smaller groups of students," said Allen. "My favorite kind of interactions are office-hour type interactions, where a group is sitting around a table discussing course material in a highly interactive way."

But, he added, some faculty may use extra time to pursue research instead of teaching. Keeping faculty interested in teaching might require additional incentives — Allen says he's not sure what those would be, but they're of critical importance.

"In terms of incentivizing things,

largely online."

Because MITx is largely different from classic lecture-style courses, interested faculty will — at least initially — need to spend time developing a web-based course. Faculty participation is voluntary, says Reif, but he expects there to be interest.

"[For] those faculty who would want to do this — and I hope many will — this will require an investment of their time. ... After that investment of time, if we do this right and take a lot of the human aspect out of the automated process, I don't expect faculty committing too much time into this," said Reif.

Agarwal said he has seen "extraordinary excitement" among faculty who have met with him and the provost about MITx. "I think our challenge will be, how do faculty create time for themselves in their already-busy teaching schedules?" said Agarwal. "Much like writing a textbook, it could be during summer or during a sabbatical or while teaching a course do extra work during that time. And we will offer help, in terms of TA help and engineers and others to help code up exercises and things like that."

Beyond the possibility of a share in revenue, why would faculty want to devote so much time to developing an online course?

Allen notes that participation in MITx is also a research opportunity. Faculty could evaluate the effectiveness of online teaching approaches, and maybe publish their findings. Still others may simply be inspired

## Can an MIT professor save the USPS?

With the United States Postal Service (USPS) on the verge of eliminating 35,000 jobs to avoid bankruptcy, government officials are desperately seeking solutions to avert the crisis. MIT might have one. In the coming months, MIT Professor and the holder of the first copyright to "EMAIL," Shiva Ayyadurai will be working on a proposal that will investigate how the USPS could save thousands of jobs by entering the email management industry.

According to Ayyadurai, large companies lack the email infrastructure to efficiently handle the overload of messages coming into the company every day. As a result, important messages are not being correctly sorted and delivered to the proper recipients. Sorting between important and junk email is a difficult problem that requires "human eyes"; even the most intelligent algorithms fail to sort efficiently.

Ayyadurai believes the USPS can provide a service that will help companies become more efficient at managing their own email. Under his plan, the USPS can retrain workers

it intends to lay off in order to support the proposed system and generate enough revenue to avoid bankruptcy. Though some email management systems outsource work to countries like India, Ayyadurai argues that the USPS is a trusted and reliable brand, and can do a better job.

Last September, FastCompany, an entrepreneurship and technology magazine, interviewed Ayyadurai about his ideas on the future of the USPS. The article was picked up by USPS senior officials, who have since contacted Ayyadurai about his ideas. Ayyadurai has firsthand experience in the email management business. In 1996, Ayyadurai started a company called EchoMail, which uses an algorithm to intelligently organize email for businesses. However, Ayyadurai discovered that even an intelligent algorithm could not sort email as efficiently as an actual human. On March 13, Ayyadurai will speak about the future of the postal service for the MIT Communications Forum.

—Robert McQueen



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#### Solution to Sudoku II

from page 8

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

#### Solution to Techdoku II

from page 8

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1 | 6 | 3 | 5 | 2 | 4 |
| 4 | 3 | 6 | 2 | 5 | 1 |
| 5 | 4 | 1 | 3 | 6 | 2 |
| 6 | 5 | 2 | 4 | 1 | 3 |
| 2 | 1 | 4 | 6 | 3 | 5 |
| 3 | 2 | 5 | 1 | 4 | 6 |

## MITe MIT Energy Initiative

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# Energy Futures during IAP 2012

► Highlights below. Visit our website for more events! ◀

## Tuesday 1/17

1-2pm. 1-390

### Science & Engineering of Gas Shales

Origin and Properties of Source Rocks



## Wednesday 1/18



5:30-7:30pm. 32-155

### Careers in Energy

Panel with MIT alumni

## Thursday 1/19

12-1pm. E19-319

### Green Ambassadors Workshop

Make a greener campus



## Friday 1/20

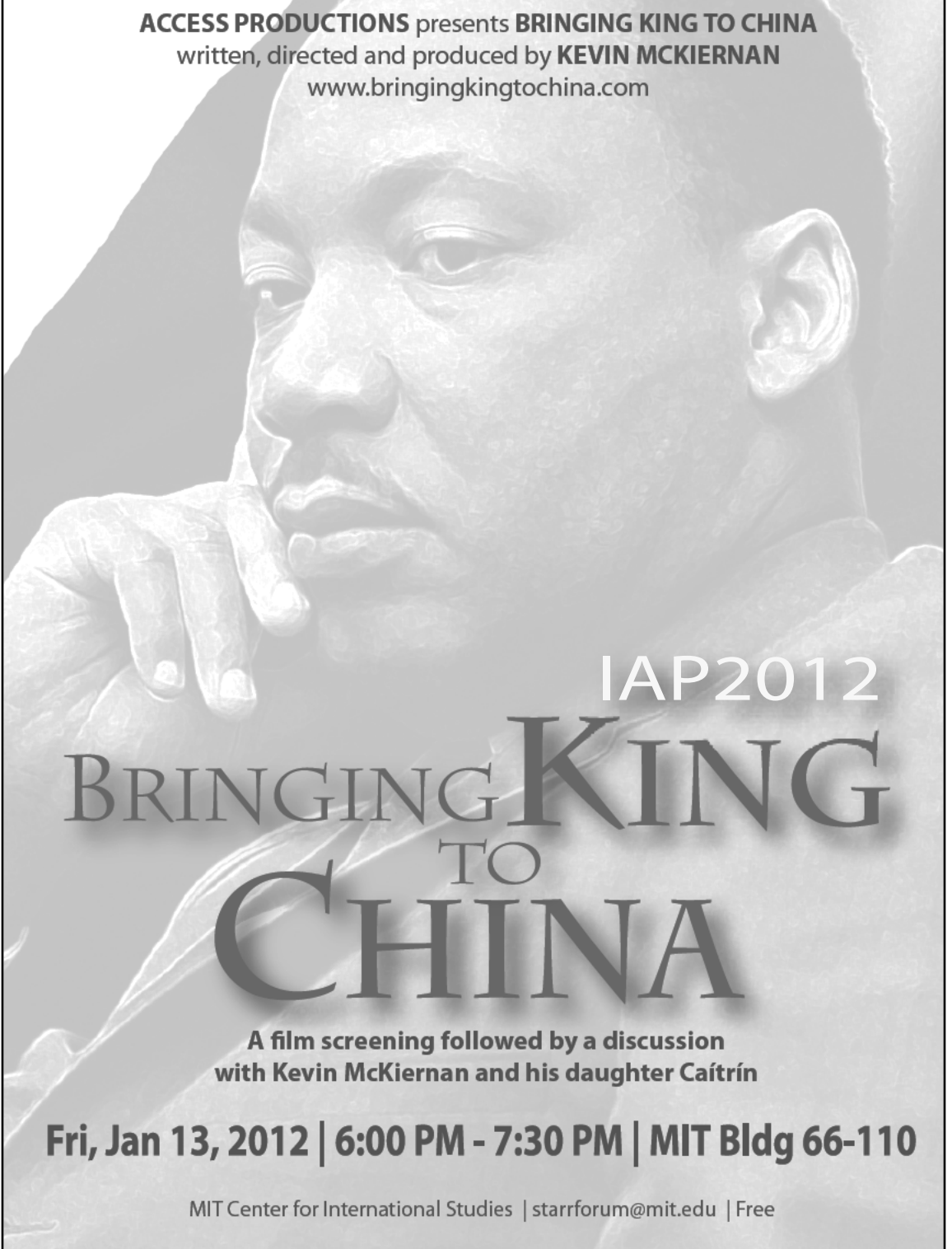
11am-12pm. 3-133

### Wind Energy Seminar

Physics & resource assessment

For more details, visit [web.mit.edu/mitei/iap](http://web.mit.edu/mitei/iap)

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with Kevin McKiernan and his daughter Caítrín

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MIT Center for International Studies | [starrforum@mit.edu](mailto:starrforum@mit.edu) | Free

# Mass Ave./Vassar St. intersection a deadly hazard

By Meghan E. Irons  
THE BOSTON GLOBE

CAMBRIDGE — As the traffic signal turned red Friday morning, Marcia Pearson paused her lavender bicycle in the middle of Vassar Street.

When the coast was clear — no cars or trucks turning from Massachusetts Avenue — she rode across the street using the crosswalk, which is designated for pedestrians.

"This intersection makes me nervous," said Pearson, a Somerville resident who bikes regularly to work in Boston. "I like to cross the way pedestrians do. I don't feel safe in this spot right here."

With good reason. Thousands of bicyclists, pedestrians, and motorists converge each day at the intersection

near the Massachusetts Institute of Technology campus, where crowds of students on Vassar Street meet traffic on Massachusetts Avenue. Police say it's a hazard.

"For the amount of volume that goes through that intersection ... I would say it is one of our highest accident locations in the city," said Police Deputy Superintendent Jack Albert.

Since 2007, Cambridge police responded to 55 accidents at the intersection, 24 of them involving cars and bikes, according to police reports. Many resulted in minor injuries, the records show, but last month one was fatal. MIT graduate Phyo N. Kyaw of Cambridge was riding a bicycle when he collided with a truck.

Police have targeted the intersection as part of a roadway safety campaign aiming to improve bicycle safety across the city by educating riders and cracking down on those who violate traffic laws.

At the crash site Friday, black cable secured a white bicycle on a signpost. Flowers, candles, and sheet music were placed around the wheels of the bike that bore a message to Kyaw, a 23-year-old native of Myanmar: "You are dearly missed."

Albert said Kyaw was wearing a helmet. But neither the police nor the Middlesex district attorney's office released details about how the accident occurred, citing an ongoing investigation.

Albert said accidents are bound to happen with so many people us-

ing the intersection.

Efforts have been made to improve it.

While road design enhancements were being made on Massachusetts Avenue last year, MIT urged the city to adjust the timing of traffic signals to be more pedestrian friendly.

But the Massachusetts Avenue and Vassar Street intersection — which had 16 accidents last year alone — remains a hot spot. It was second on the Police Department's list of top five dangerous intersections in 2011, following closely behind Gardner Street and Massachusetts Avenue in Harvard Square.

Pete Stidman, who heads Boston Cyclists Union, urged improved traffic design and better awareness of cyclists and drivers who use the road.

"Twenty-four out of 55 would be a pretty high percentage," said Stidman, referring to the number of accidents involving bicycles at the intersection. "That is definitely a cause for concern."

According to the police accident reports, blame was not confined to a single group. Motorists ran red lights, cyclists followed vehicles too closely, and many ignored traffic signals. Of the 55 accidents since 2007, 26 involved vehicle-only accidents and three involved pedestrians, the reports show.

Most of the accidents involved drivers making right turns colliding with bicyclists because they did not see them.

On Dec. 12, a bicyclist riding on Mass. Ave. through the intersection told police a dark red sedan on Vas-

sar Street went through the red light, striking him in the middle of the road. He landed on the hood of the car, then fell off when the driver sped up, the report said.

On July 18, a bicyclist following closely behind a van on Massachusetts Avenue collided with another car attempting to make a turn onto Vassar. The drivers of the car and van did not see the cyclists, the police report said.

On April 17, 2007, a driver told police that she was heading south on Massachusetts Avenue when she felt as if she may have had a flat tire. She lost control and rammed into the front of another car.

On Friday, commuters hurried to their destinations, and many said that despite its high volume of users, the intersection is relatively safe — a sentiment shared by police.

"I use the lights," said Dennis Nangle, an MIT instructor, who was riding to work on a scooter. "If you are riding a scooter, bike, or motorcycle, you tend to be aware of what is happening."

But there were plenty of near misses at the intersection Friday morning. A bicyclist was seen slipping through traffic just as two trucks were making turns. A car blew through a red light. And a garbage truck barreled through the intersection, ignoring a pedestrian using the crosswalk.

Most bicyclists wore helmets, but during a 15-minute span a dozen cyclists seen navigating the roads had only winter hats or earmuffs protecting their heads.

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12PM | Thursday January 19th | Lobby 10

## Outpouring of support online

*Friends of Phyo raises \$15,000*

Kyaw, from Page 1

pouring of support for his family on Facebook. Albert Chang '10 organized a fundraising effort, in part via a "Friends of Phyo" Facebook page, for funeral arrangements and to return Kyaw and his belongings to Myanmar. Within a couple days of beginning the effort, says Chang, over \$15,000 had been raised for the cause.

Donations from \$5 to \$2000 came in from diverse places. Many contributors were fellow members of the Class of 2010, while others were friends from Sigma Nu, Next House, Camp Kesem, and Soane Labs. Local members of the Burmese community, even those who didn't know Kyaw personally, also chipped in.

"Phyo was full of life and a friend to all," said the description on the Friends of Phyo page, "May we share our happy memories of him to keep his spirit alive."

"This death, so tragic and so close to home, touches and concerns our entire community," said Chancellor Eric Grimson PhD '80 in a statement. "Our thoughts go out to Phyo Kyaw's family, friends, and classmates. We share their sense of loss and grief."

"Phyo was one of the first people I befriended at MIT, and everyone he touched will sorely miss the incred-

ible level of enthusiasm and happiness that he brought to everything he was involved with," said Chang.

A small Buddhist service was held for Kyaw at his apartment, followed by a memorial service at a funeral home in Boston last Monday. Chang says another service to be held at MIT, when more people are back on campus, is being planned.

### Intersection safety?

An investigation into the crash is being led by the Middlesex District Attorney's office, with help from Cambridge and MIT police. The truck driver was uninjured, according to 7 News. He has not been charged.

Middlesex DA spokesperson Jessica V. Pastore said that there is no clear time frame for when the investigation will be complete. It could take anywhere from a few weeks to a few months, she said. During that time, State Police will reconstruct the scene, and with the DA's office, determine if there was criminal negligence and probable cause to charge someone.

The death has also renewed concern over the safety of the Mass. Ave./Vassar St. intersection. Since 2007, Cambridge police have responded to 55 accidents at the intersection, 24 of them involving cars and bikes, the *Boston Globe* reported on Monday. In 2011, the intersection ranked No. 2 in Cambridge's top five dangerous intersections.

The *Globe* also published an editorial on Monday calling for changes to the intersection. "... It is clear that the intersection should be modified to make it safer for the thousands of people who pass through it every day," wrote the *Globe*. "More visible traffic lights, for example, or signs cautioning drivers and bikers alike, would be a good addition."

MIT community members who feel affected by this death are encouraged to contact Mental Health Services at 617-253-2916.

SMBC, from Page 7



Solution to Techdoku

from page 6

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 6 | 2 | 5 | 4 | 3 | 1 |
| 5 | 1 | 4 | 3 | 2 | 6 |
| 1 | 3 | 6 | 5 | 4 | 2 |
| 4 | 6 | 3 | 2 | 1 | 5 |
| 3 | 5 | 2 | 1 | 6 | 4 |
| 2 | 4 | 1 | 6 | 5 | 3 |

Solution to Stumper Crossword

from page 7

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

Solution to Sudoku

from page 6

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

# Weapon caused spacecraft's failure?

By **Andrew E. Kramer**  
THE NEW YORK TIMES

MOSCOW — A Russian scientific spacecraft whizzing out of control around the Earth, and expected to re-enter the atmosphere on Saturday, may have failed because it was struck by some type of anti-satellite weapon, the director of Russia's space agency said in an interview published Tuesday.

He did not say who would want to interfere with the spacecraft, which was intended to explore a moon of Mars.

The Russian craft, named Phobos-Grunt for the moon and the Russian word for ground, ran into trouble soon after it was launched in November, when its rockets failed to lift it out of low Earth orbit. What was to have been a two-and-a-half-year interplanetary journey to retrieve a soil sample from Phobos will instead end over the weekend, according to Russian engineers.

When the 13-ton Phobos-Grunt breaks up in the atmosphere, debris could potentially fall anywhere along a vast stretch of the Earth's surface that includes the cities of New York, London and Tokyo. Though the odds are heavily against the debris causing any harm, the spectacle of people around the world anticipating the crash is another embarrassment for Roscosmos, the Russian

space agency, which has presided over a series of rocket and satellite failures this year.

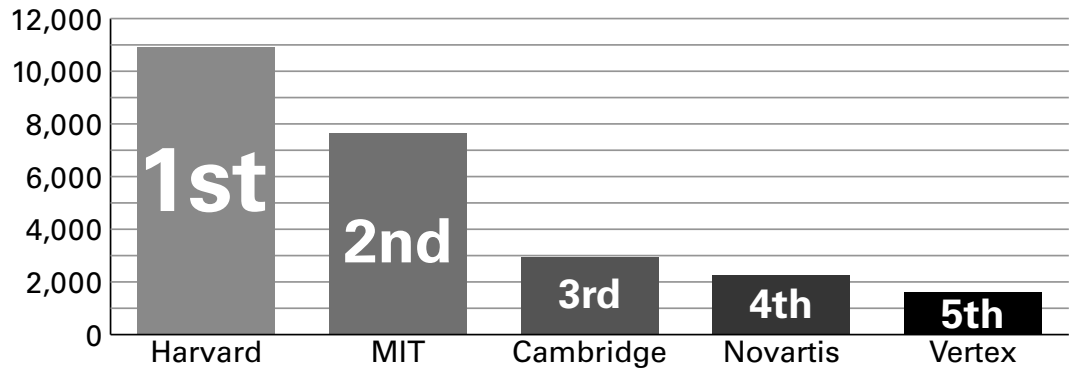
A statement from the U.S. Strategic Command acknowledged that it was tracking the space probe and that it is likely to fall in the next week. "Predictions of re-entry date, time and location can change significantly due to many changing factors, such as solar weather and orientation of the spacecraft," the statement said. "These predictions become more accurate as the event approaches."

When Phobos-Grunt first went awry, the director of the Russian space agency, Vladimir Popovkin, said that a flawed navigational computer might be to blame.

NASA officials said that they helped Roscosmos, using NASA's antennas known as the Deep Space Network, to try to re-establish contact with Phobos-Grunt, and that NASA had continued these efforts until the antennas were needed for the launch of its Mars Science Laboratory spacecraft on Nov. 26.

Popovkin's remarks to the newspaper Izvestia were the first high-level suggestion of nefarious interference. A retired commander of Russia's missile warning system had speculated in November that strong radar signals from installations in Alaska might have damaged the spacecraft.

## Largest 15 Cambridge Employers ranked by number of employees

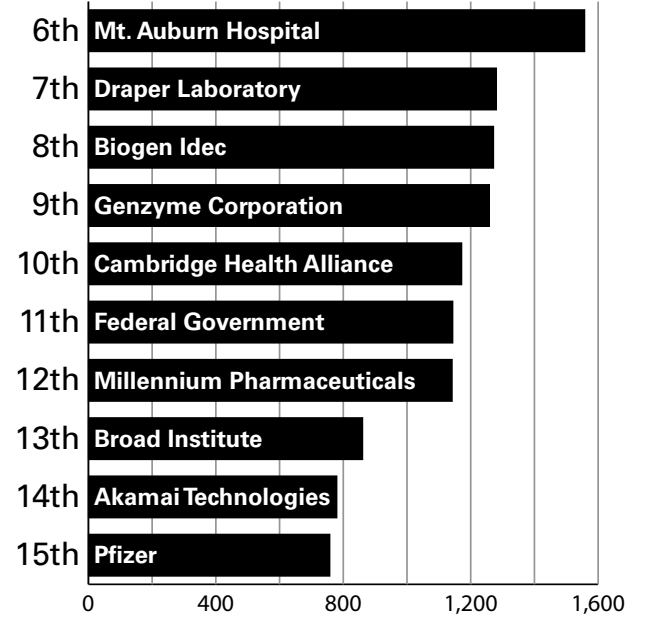


### Out of the top 15:

**6** are Biotechnology companies

**2** Higher Education Government Health Care R&D

**1** is an Internet Technology firm



Employer data from Cambridge city government. All figures collected between 7/11 and 12/11, except for Vertex Pharmaceuticals, which is from 2010. Source: [http://www2.cambridgema.gov/cdd/data/labor/top25/top25\\_2011.html](http://www2.cambridgema.gov/cdd/data/labor/top25/top25_2011.html).

INFOGRAPHIC BY SARAH RITTER—THE TECH

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## RESTAURANT REVIEW

# Cambridge's meat Mecca

Midwest Grill sparks some savory thoughts of carnivorism

By Keith Yost  
STAFF WRITER

I'm not bigoted against vegetarians. On the contrary, I have many vegetarian friends. I talk and joke and laugh with them as if they were real people. I am a big enough person to tolerate them, even if they have not been enlightened by that most divine truth: the Maillard reaction is proof that God loves us and wants us to eat meat.

Still, I pity vegetarians and look forward to the day when the wretched creatures realize their error and come to me begging for absolution from their immoral ways. And when that time comes, I know where I shall bring them. When they are ready for conversion, we shall take a pilgrimage to the Mecca of meat, Midwest Grill. I shall welcome them into the fold and count them among the saved.

In a sentence: Midwest Grill is a Brazilian barbecue near Inman Square that, for

\$25 a head, offers its customers an unending supply of a wide variety of succulent barbecue. From chicken hearts, to sirloin, to pork, to garlic-infused-bacon-wrapped-you-name-it, Midwest Grill delivers. Men with great skewers of meat come right to your table and carve off slices of the latest offering, fresh from the grilling pits. There is a regular menu, and the buffet offers one or two non-meat options, but these are merely afterthoughts; there is no doubt what Midwest Grill's true purpose on this earth is.

**Midwest Grill is like a special rite in a life of meat observance, like a baptism — a baptism by meat.**

At \$25-a-pop, the Midwest Grill is not meant to be an every-Sunday style of wor-

ship. It's more like a sort of special rite in a life of meat observance, like a baptism — a baptism by meat. At very least, it is the sort of place a value-minded person might wish to fast for a day or two before visiting. Whether you are the sort of person who believes in fasting as a part of religious ritual is not for me to judge: I am non-sectarian in my meat worship, and all faiths are welcome at Midwest Grill. I'm just saying that, for the sake of one's wallet and arteries, you might not want to make Midwest Grill part of your regular gustatory routine.

Similarly, Midwest Grill probably does not deserve a place in your rotation of first date locations. If the idea of having a first date at a church sounds off, then why would you bring a date to another house of worship? The Midwest Grill is not a place of romance. It is a place for reflection upon the divine.

There is little else to say about Midwest Grill beyond its barbecue buffet nature. Service is good, seating is a little cramped,

## Midwest Grill

1124 Cambridge St.,  
Cambridge

Lunch: Daily, 11 a.m. – 4 p.m.

and the location is somewhat inconvenient. Being a buffet, the quality is not as good or consistent as what one could get by ordering smaller portions at a standard steak house. But these are unimportant details, mere theological curiosities, like wondering how many angels can dance on the head of a pin. If your mind gets hung up on these diversions, then you are missing the true message of meatism — that the salvation of man lies in faith in meat. So long as you hold that key tenet, and have faith that more meat equals more salvation, then your time at the Midwest Grill should prove sacred.

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