THE TECH

2012 IN REVIEW

The Tech
Established 1881

FEBRUARY 5, 2013

The Tech (ISSN 0148-9607) is published on Tuesdays and Fridays during the academic year (except during MIT vacations), Wednesdays during January, and monthly during the summer by The Tech, Room W20-483, 84 Massachusetts Avenue, Cambridge, Mass. 02139. Subscriptions are $50.00 per year (third class). **POSTMASTER:** Please send all address changes to our mailing address: The Tech, P.O. Box 397029, Cambridge, Mass. 02139-7029. **TELEPHONE:** Editorial: (617) 253-1541. Business: (617) 258-8324. Facsimile: (617) 258-8226. *Advertising, subscription, and typesetting rates available.*

From the **editor**

The world may not have ended in 2012, but it was still a year full of news for MIT and the world. In this special issue of *The Tech*, we look back on the biggest headlines at the Institute.

At the helm, Susan J. Hockfield, MIT's first female president, resigned in February. She was succeeded in May by then-Provost L. Rafael Reif, who has promised to advance MIT's educational mission.

MIT collaborated with Harvard to merge MITx and HarvardX under the MOOC umbrella of edX, a multi-university effort to bring more classes online and make college level education more accessible. While the long-term effect on the residential education system at MIT remains unclear, some classes are beginning to integrate edX into their curriculum in attempt to "flip" the traditional classroom.

On the student side, the Class of 2016 — MIT's most competitive class ever — was admitted with a record low rate of 8.9 percent and a record high yield of 70 percent, resulting in no students taken off the waitlist. This class was the first to experience the shortened orientation and revamped FPOP system, which has students pay for FPOP housing and limits the duration of each program.

After a bumpy introduction last June, RLADs joined the communities of seven dormitories in 2012. They are slated to be in all dorms except Senior House by the beginning of the fall term.

Sadly, MIT lost three students last year; Heng "Nikita" Guo G to suicide, Brian G. Anderson '13 to drug overdose, and Allison Tovo-Dwyer G to cancer. These deaths shook the MIT community, prompting the administration and all of MIT to look inwards once again. In response, *The Tech* ran a pressure survey, which provided insight into the stresses facing the average MIT student.

In the following pages, you'll find a recap of the year's biggest stories — from the potential shutdown of Alcator C-Mod to an overview of the MIT sports scene. Our arts staff looks back on 2012's best movies and video games, and remembers some choice campus performances. Opinion and campus life share the favorite columns from the past year; examining the future of MIT's online presence, comparing the Institute to the other Cambridge, and discussing other hot topics that rocked MIT, from affirmative action to the best way to respond to stress.

It's often difficult to get away from the daily grind when you're at MIT. As we settle into 2013, take a moment to pause and reflect on last year. We hope that our Year-In-Review helps you remember 2012 and provides perspective as you begin the spring semester.

—Jessica J. Pourian, Volume 132 Editor in Chief

THE TECH's **YEAR IN REVIEW** 2012

NEWS IN REVIEW

JOANNA KAO—THE TECH

MIT and Harvard presidents Susan J. Hockfield and Drew Faust announce edX during a press conference on May 2. "We come together with conviction to say that online education is not an enemy of residential education, but rather a profoundly liberating and inspiring ally," Hockfield said.

HarvardX & MITx merge under edX

MOOCs rise in 2012; edX seeks to revolutionize online learning

By Leon Lin
STAFF REPORTER

They're called MOOCs, and it was the M for Massive that really started turning heads.

For every student in the lecture hall, there were a thousand more dotted around the globe who had signed up for the new massive open online course in artificial intelligence taught by Stanford professors Sebastian Thrun and Peter Norvig in the fall of 2011. Two other free online courses from Stanford also saw unexpectedly large enrollments. Students who passed the courses didn't receive college credit, but they did earn signed "statements of accomplishment."

Breaking barriers, democratizing education — these visions galvanized the world of higher education, and suddenly everyone wanted to offer MOOCs (Massive Open Online Courses). Since MIT's OpenCourseWare made a splash in 2002, many universities had been making course materials available online. Fewer, though, had initiatives like Stanford's or Carnegie Mellon's that actually gave feedback to online students.

After the three popular MOOCs from Stanford, other universities scrambled to develop their own distance education programs. New companies, organizations, and websites are still sprouting up to fill different niches in the burgeoning arena, whether they're providing reviews of MOOCs, allowing users to create their own courses, or partnering with universities to offer MOOCs. The mission to offer free education to the world hasn't come without its politics — in June 2012 the president of the University of Virginia was ousted and reinstated just two weeks later in a brief crisis over the role of online learning, among other things. Discussions within universities are suffused with disagreement, and deals between universities carry a tinge of competition.

> **The pilot course, 6.002x Circuits and Electronics, opened to its 150,000 registrants in March 2012.**

The frenzy has generated an entire MOOC ecosystem. But after a year of impressive growth, many questions concerning the roles of both MOOCs and traditional brick-and-mortar campuses have yet to be answered.

Dramatis personae

MIT claimed a spot center-stage in December 2011 with the announcement of MITx, a platform for MOOCs. The pilot course, 6.002x Circuits and Electronics, opened to its 150,000 registrants in March 2012. In addition to the standard video clips, discussion boards, and text boxes for typing in numerical answers, 6.002x emulated a lab experience with its interactive circuits editor.

In May, MITx was subsumed under edX, a new non-profit founded by Harvard and MIT. Each school pledged $30 million to the initiative. "What we will discover together will help us do what we do better — to more effectively, more creatively, increase the vitality of our campuses — and at the same time increase educational opportunities for learners and teachers across the planet," Susan J. Hockfield, then president of MIT, said at a press conference.

Two other promising MOOC platforms

that emerged last year were Coursera and Udacity, start-up companies that grew out of Stanford's online learning initiatives. Coursera is now by far the biggest of the three, with over 2 million registrants, more than 200 course offerings, and 33 university partners, including Stanford, Princeton, Caltech, and the University of Pennsylvania. The list of edX's partners has grown more slowly to 6, and of those only Harvard, MIT, and UC Berkeley have offered MOOCs so far. These universities are each pushing out about five courses a semester. Udacity's courses, not affiliated with any institution, stray a little further from the traditional college model in that they do not run in scheduled periodic iterations — students move at their own pace.

The students taking these classes are diverse. They live in six different continents and were born in as many different decades. They've logged in hoping to fulfill their curiosity, supplement their studies, pad their resumes, move forward in their professions, or just find out what all the fuss is about. They are enthusiastic, and it shows in the comments they post. They form study groups in the discussion boards or on other social media; some even meet in person. Typically, though, only 5 to 15 percent of the students that sign up for a course stick with it to the end.

The online format and grading

MOOCs seem to have converged upon a common format for the core of their content: sequences of lecture video clips, usually less than 15 minutes each, interspersed with questions that check for understanding. Students can also interact with each other in discussion boards, which are generally very active.

Perhaps it's not a surprise that so far topics in computer science have had disproportionate representation on MOOC platforms. Some have asked whether the online format will work for humanities classes.

The harder challenge for MOOC providers is the grading. With thousands of students, the best system many MOOCs have been able to offer is some combination of multiple-choice questions and questions with numerical answers. When it comes to assessing open-ended responses, educators have had to get creative. Still within the limits of automation are computer algebra systems that can tell when two expressions are equivalent, and automatic graders that can process student code in programming classes. A few courses also have fancy interactive web tools, like 6.002x's circuit editor.

But humans are still the most reliable graders of written assignments and other types of creative work, at least until someone who's taken one of the several artificial intelligence MOOCs can get computers to understand essays. Some courses from Coursera are matching up students with each other's essays to grade, with each essay's final score determined by an algorithm that takes into account the entire network of students. Another proposed solution has been to farm out the grading to large numbers of independent evaluators on the internet, though no MOOC seems to have implemented that yet.

Perhaps it's not a surprise that so far topics in computer science have had disproportionate representation on MOOC platforms. Some have asked whether the online format will work for humanities classes. "We cudgel our brains to think of online modules that might make sense for literary education. One of my colleagues suggested that we might teach punctuation this way," MIT literature professor Ruth Perry wrote in the faculty newsletter.

Anant Agarwal, president of edX, told *The Tech* last year that he envisions edX changing education across all disciplines. The first humanities courses on edX were announced in December and are running this spring.

Certificates, cheating, and shades of free

Whatever the grading scheme, in most MOOCs, those that pass receive certificates, with the imprimatur of the sponsoring university if it's an edX course. How potential employers, admissions committees, and university registrars appraise these certificates will likely be determined as the online education market stabilizes. Most agree that there are aspects of a residential program that just can't be replicated online, and it's worth noting that the edX's university partners are not awarding formal credit for MOOC certificates, at least not yet. However, edX has maintained from the beginning that its courses match the rigor of their on-campus counterparts.

A headache that comes with certification is the possibility of cheating. One approach to prevention involves sophisticated mechanisms to detect not only which answers are whose but also which user accounts are whose. Udacity and edX have also taken a more straightforward step: offering students the option of taking proctored final exams at one of the Pearson VUE testing centers in 175 countries. Of course, this opportunity to get specially authenticated certificates comes at an extra cost — for the first round of 6.002x students, it was $95. EdX has suggested that it may charge a small fee for regular certificates in the future, too.

And that raises another question, especially pertinent for the MOOC providers that intend to profit: how does one sustain an operation that serves thousands for free? Though Coursera and Udacity together have attracted nearly $40 million from venture capitalists, the business models of Coursera and Udacity are still being worked out,

according to *The New York Times*. Possible revenue sources include supplementary tutoring services, deals with recruiting companies, and licensing fees from colleges that want to use the online courses. For its part, edX has said that it would eventually make its software open source. All three MOOC providers have expressed a commitment to keeping their courses open to as many as possible.

And maybe that's all that matters. "In many MOOCs it is possible to get a certificate by gaming the system and not learning very much (I seem to remember some people doing that at brick-and-mortar universities as well)," Mark L. Polak '84 wrote in a comment to *The Tech*. "I say, so what! I am enrolled in the Greek Heroes class and I hope to extract incredible value from it, regardless of whether I obtain a certificate."

Back on campus: the flipped classroom

With MOOCs seemingly giving away courses that traditional students are paying steep tuitions for, some have wondered what will become of colleges as we know them today. "Will the outcome of this be less HarvardX than ex-Harvard?" asked Harvard English Department Chair W. James Simpson at a faculty meeting, according to *The Crimson*. We're reminded that the $200,000 price tag is attached to the entire package that is an undergraduate experience rather than just the lectures and exams.

MIT has emphasized that it hopes to enhance, not devalue, the education of its own students using the new technology being developed for MITx. "The only reason I am participating in this is that MITx is providing resources that will improve my residence-based course," Michael J. Cima wrote in an email to *The Tech*. Cima is the instructor for 3.091x Introduction to Solid-State Chemistry, which begins its second iteration on February 5.

Taking greater pedagogical advantage of online tools is not a new idea, but 2012 saw new organized efforts from MIT in that direction. In the spring, a group of 20 MIT students in 6.002 didn't attend lecture with the rest of their class, but instead took the online version alongside edX students (though the 20 MIT students were also provided more resources and opportunities to meet up for discussion). In the fall, ESG and Concourse 8.01 students read notes and completed exercises on the edX platform. And in November, President Reif appointed mechanical engineering professor Sanjay Sarma the first Director of Digital Learning.

The experimental versions of 6.002 and 8.01 used what's known as the "flipped" (or "blended") classroom, which Sarma hopes to further explore. In this model, the knowledge that's traditionally imparted via lecture is relegated to online reading, videos, or interactive sequences, which students can go through on their own time. During class then, instructors can take full advantage of the fact that students are together in person and do something more engaging, like run a discussion or problem-solving session.

Many classes at MIT, such as those using TEAL, are already flipped to various degrees, and education researchers like those at MIT's Teaching and Learning Laboratory (TLL) and the Research in Learning, Assessing, and Tutoring Effectively (RELATE) group are trying to find out what works best. In September, the TLL received a $200,000 grant from the NSF to examine how learning works in MOOCs and classrooms by analyzing data about student study habits and performance, which can be collected in large volumes when it comes to online classes.

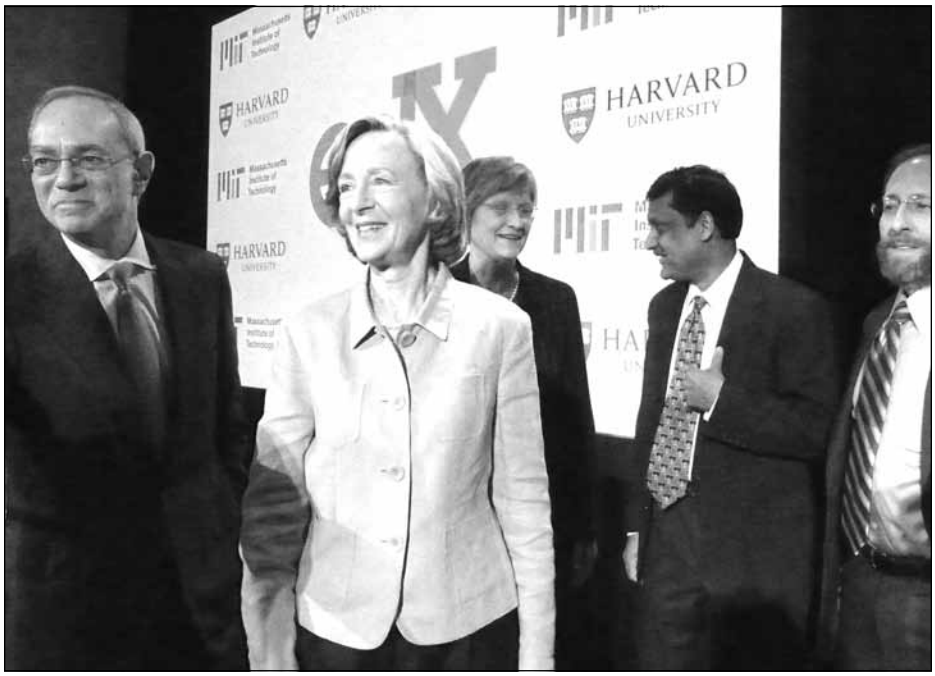
An uncertain future for traditional colleges

While schools like MIT probably aren't going away anytime soon, the future of other institutions is less clear. A September report from Moody's Investor Service predicted that MOOCs would have "negative effects on for-profit education companies and some smaller not-for-profit colleges that may be left out of emerging high reputation online networks."

Not being left out are Bunker Hill Community College and MassBay Community College, whose students can now take a for-credit flipped Python class with edX materials. Coursera has announced a similar collaboration with Antioch University.

There has also been speculation as to how MOOCs could affect younger students. With another two GIRs slated to be on edX, 8.02 and 7.012, the type of motivated high school students that MIT accepts might well have a significant amount of MIT's coursework under their belts before even setting foot on campus. It's hard to say what the effect will be in the long term, but we can start watching as soon as the MOOC-aware freshmen arrive on scene this fall.

"I am completely clueless about how edX will turn out, and I think everyone should be," computer science professor Patrick Henry Winston wrote in an email to *The Tech*. "We are in a highly turbulent period where today's great idea will be tomorrow's dinosaur. The only thing that is certain is that we have to put our visionaries to work, we have to try all manner of experiments, and we have to manage our way through, as no one has a good enough crystal ball to predict how the world of education will look in a decade."



JOANNA KAO—THE TECH

Susan J. Hockfield smiles for the camera after the press conference in May introducing edX, MIT and Harvard's new online learning collaboration.

IAN M. GORODISHER—THE TECH

John S. Reed '61, chairman of the MIT Corporation, hands over the Charter of MIT to President L. Rafael Reif, making Reif's presidency official.

Reif takes the reigns of the Institute

L. Rafael Reif succeeds Susan Hockfield as 17th president of MIT

By Ethan A. Solomon
EXECUTIVE EDITOR

It took MIT less than 86 days to pick a new president. If that sounds like a short amount of time to whittle down, interview, and vet a list of dozens of candidates, consider that the MIT Corporation's final pick was somebody who the Institute already knew quite well. Somebody, in fact, who was already as close to the presidency as he could possibly get.

Then-Provost L. Rafael Reif was elected as MIT's 17th president on May 16, 2012, succeeding Susan J. Hockfield, who had announced her resignation three months prior. James A. Champy '63, who chaired the joint Corporation-faculty presidential search committee, said there was a need for speed, citing ongoing initiatives like edX, the MIT-Russia partnership, and preparations for a new capital fundraising campaign. "There's just too much to do," he told *The Tech* in early May. For comparison, Hockfield's search committee took eight months.

Reif's long history with MIT made him a natural choice, and one that was supported by the broad array of faculty and Corporation members who contributed to the search process. He had served as provost — MIT's top academic officer — under Hockfield for seven years, navigating the financial crisis and painful budget cuts, forging high-profile international partnerships, and spearheading the formation of the edX online education platform.

> **Reif outlined his vision for MIT, emphasizing the Institute's mission to advance teaching and learning.**

As Corporation Secretary Kirk D. Kolenbrander told *The Tech* on the day of Reif's election, "every audience we spoke with, every time we assembled an individual or a group, we heard a yearning for someone who understood the institution. That wasn't true in 2004. It may well not be true in 2019, in whatever the year will be. It was true in 2012."

"I cannot tell you this is a dream come true because this is a dream I never dared to imagine," said Reif at his May 16 press conference. He outlined his vision for MIT, emphasizing the Institute's mission to advance teaching and learning, saying that "every member of our faculty knows the thrill of teaching our incredible students."

Students, too, were pleased with the pick. "MIT is both a place of research and education for students, but it's also their home," said Bryan D. Bryson G, a member of the student advisory group to the presidential search committee. "To know that those words were then captured by president-elect Reif's remarks when he presented MIT as a home to both students and faculty, staff, etc., that really indicates a really key feature."

Reif inherits the task of starting a new capital campaign for MIT, raising money to support the Institute's academic and research activities alongside a 20-year phased campus expansion and renovation. Hockfield cited the new campaign in her decision to leave, noting that a campaign could take up to eight years on top of the seven she had already served. The necessary fundraising to support MIT's future will "require the full focus and sustained attention of the Institute's president over many years," wrote Hockfield in an email to the community last February.

CHRISTOPHER A. MAYNOR—THE TECH

The neutral beam accelerator at the MIT Plasma Science and Fusion Center's Alcator C-Mod tokamak.

Alacator C-Mod remains operational

Budget cuts threaten funding in 2012, future of tokamak uncertain

By Austin Hess
ASSOCIATE NEWS EDITOR

MIT's tokamak, Alcator C-Mod, has faced the threat of losing all of its federal funding throughout 2012. The experimental fusion reactor, which relied on $24 million from the Department of Energy for operation in 2012, was unexpectedly slated to lose all federal support in March in the President's budget proposal for fiscal year 2013. The loss of these funds, nearly the entire budget of C-Mod, would force the closure of the experiment, one of just three such devices in the U.S.

Under the proposal, C-Mod's funding would be instead be used toward the U.S. portion of the International Thermonuclear Experimental Reactor (ITER), an international collaboration on a large fusion reactor, expected to begin operation by 2019 in France.

In April, the bill dealing with 2013 energy and water appropriations reached the U.S. House of Representatives Committee on Appropriations. Though the funding cuts had originally been part of a Department of Energy recommendation, the committee chairman, Rodney Frelinghuysen, said, "Funding for the domestic fusion program is restored to last year's level, and the international fusion program is increased to come closer to our commitments," suggesting the cuts were perhaps not likely after all.

> **MIT fusion faculty have argued that closing Alcator C-Mod will have a detrimental effect on the entire U.S. fusion program.**

In September, Congress passed a continuing resolution to provide six months of funding to C-Mod in an effort to bridge the interim until the actual FY 2013 budget is passed or the project receives funds from another funding resolution. According to Nuclear Science and Engineering professor Ian Hutchinson, C-Mod is currently in "maintenance mode" rather than producing plasma, and scientists on the project are analyzing previously collected data. Members of the MIT Alcator C-Mod team hope to resume full operations once the FY 2013 budget is passed.

Of the three U.S. fusion reactors, Alcator C-Mod receives the smallest portion of federal funding and would be the only one completely shut down under the current proposal. The presidential proposal would send $150 million to ITER and $250 million to domestic programs. However the House Energy and Water Committee proposed allocating $300 million to domestic programs and $180 million to ITER. There is still no final decision on FY 2013 Alcator C-Mod funding.

About 120 people are employed directly by Alcator C-Mod, but full budget cuts would cause all staff and technicians to be laid off. All graduate students would have to finish their research and graduate by October 2013.

MIT fusion faculty have argued that closing Alcator C-Mod will have a detrimental effect on the entire U.S. fusion program, foreseeing a decline in graduating fusion PhD students who could work on ITER or domestic experiments in the future. Alcator C-Mod graduate students also spoke out, highlighting the importance of the reactor. They say it is the largest experiment at MIT in terms of both funding and employees.

Alcator C-Mod's condition will likely remain uncertain until Congress passes a FY 2013 budget, but there are no plans to dismantle the device or lay off staff yet.

Seven dorms receive RLADs this year

Controversial position designed to support housemasters, GRTs

By Stan Gill
NEWS EDITOR

This year saw the implementation of Residential Life Area Directors (RLADs) into most west campus dormitories. The RLADs — an extension of the previous Residential Life Associates (RLA) position — are meant to provide support for students, housemasters, and Graduate Resident Tutors (GRTs). They joined the communities of Maseeh, McCormick, MacGregor, Burton-Connor, New House, Next House, and Simmons at the start of the Fall term.

The existence of the position was leaked to the public through an anonymous letter sent via email by "Tim Beaver" to many campus mailing lists on June 2. The sender included a link to a letter Chancellor Eric Grimson PhD '80 sent to the housemasters on May 29. Subsequently, many students, including GRTs, chimed in on various email lists, expressing concern that the letter was the first they had heard of the changes to come. The GRT contract, which the GRTs renewed on the day Grimson sent the letter to the housemasters, had no mention of the addition of RLADs — the contract only contained small changes such as dates that the GRTs were to be on campus and clarifications to the pet policy.

"It was not our intent to roll out the position the way we did," Henry J. Humphreys, Dean of Residential Life and Dining said to *The Tech* in August. "Once we decided to go forward, we needed to move quickly, as the window for hiring officials for the position in the summer is small."

The resultant discussion on various dorm lists included concerns about the RLADs disrupting the normal GRT, housemaster, and student communication lines. Other criticisms included the seemingly top-down nature of the decision and its timing, as well as the way in which the information about the position was released.

"When we are told one thing, and there is information leaked that says something else, there are some questions about what the motivations are," Chris L. Follett VIII G, a GRT on East Campus Third East said to *The Tech* in June.

Ultimately, student input was taken into account for the final implementations, which Grimson promised. Interviews were conducted for the position in July by groups of students, GRTs, housemasters, and administrators. Students from were able to collectively submit their opinions as a dorm for their preferences of candidates. In the end, seven RLADs were assigned, down from the intended 9 due to opposition from Senior House residents and the Baker housemasters being on sabbatical for the 2012-13 academic year.

Despite the controversy and hiccups, the RLADs feel that they have adjusted well to their new role.

In August, the MacGregor RLAD position, previously to be filled by Tamika Smith, became vacant before the term began. Humphreys had no further comment on the situation. However, Smith still had positive things about to say about the position and its purpose.

"It's great to have faculty members that run the halls, but you may have a class with that person or your GRTs may be your TA for that class," Smith said to *The Tech* in August. "[with the RLADs] you would have one other person to speak to, one other person who knows what resources are available, and has been trained to support you and get you the resources that you need."

Smith was replaced by Micheal Zakarian in late October.

Despite the controversy and hiccups at the start of the semester regarding the construction of RLAD office spaces and apartments in dorms that did not previously have dedicated space for previous RLAs, the RLADs feel that they have adjusted well to their new role. In response to what her favorite moment as an RLAD was thus far, Laurel Dreher, the Next House RLAD, said, "All those little moments where you feel like you're welcomed, like you're becoming a part of the community. Whenever students leave me notes on my office, GRTs knock on my door late at night with questions ... it's those little moments where students are coming to you, and you feel like you've made an impact. "

Christina Davis, director of Residential Life Programs, confirmed that the RLAD program will be expanding in the near future. The Division of Student Life hopes to put out a call for and hire RLADs for Baker, East Campus, and Bexley (the Bexley RLAD will also serve Random Hall), to start in Fall 2013.

COURTESY OF DIVISION OF STUDENT LIFE

The seven RLADs.

Three student deaths hit MIT in 2012

Community mourns passing of Anderson, Tovo-Dwyer, and Guo

By Stan Gill
NEWS EDITOR

In 2012, the MIT community was saddened by the deaths of three members: Brian G. Anderson '13, Heng "Nikita" Guo G, and Allison Tovo-Dwyer G. Guo's death was ruled a suicide, Anderson's was due to an opiate overdose, and Tovo-Dwyer passed away after a year-long battle with cancer.

Anderson

Anderson was found dead in his room in Next House on Feb. 20. The 21-year-old from Redwood Falls, MN, was a junior in Course 15 (Management), part of the MIT wrestling team, and a member of the previous incarnation of the Beta Theta Pi fraternity chapter at MIT.

His mother, Cecilia Anderson, remembered him fondly as a tough and determined individual at his memorial service in Minnesota last March.

Guo's death was ruled a suicide, Anderson's an opiate overdose, and Tovo-Dwyer a year-long battle with cancer.

"He was quick as a jackrabbit: both physically and mentally gifted," Cecilia Anderson said. "He loved outwitting people and he had an indomitable spirit. There was nothing he couldn't do if he put his mind to it."

The Massachusetts Office of the Chief Medical Examiner stated in March that Anderson died of accidental "acute opiate intoxication with cardiac enlargement contributory." The cause of death was revised two weeks later to "acute and chronic substance abuse." Opiates include oxycodone, heroin, Vicodin, codeine, morphine, and many other related drugs. No information is available on what particular drug caused Anderson's death.

The wrestling team does not test for drugs, according to team captain at the time Samuel W. Shames '14. NCAA rules state that students should be ready for a drug test at any time, but wrestling, as a club sport, does not have to abide by those rules as varsity sports do.

"This tragic death reinforces the very serious danger that drugs may pose to the well-being of our community of our community and its members. We want to ensure that all members of our community are aware of the resources we make available to anyone who seeks help or guidance around issues of wellness and safety," Grimson said in a statement through the MIT News Office.

Tovo-Dwyer

In the fall, third-year Department of Chemistry graduate student Allison Tovo-Dwyer passed away on Oct. 11 after a year-long battle with cancer. She was 25 years old.

Tovo-Dwyer worked under Professor Arup K. Chakraborty while at MIT. Her research focused on using statistical physics to understand the human immune response to HIV infections and on harnessing the information to help design a potent vaccine.

"Allison was a brilliant woman who would have developed into a great scientist," Chakraborty said to *The Tech* in October. "Her first publication was accepted into a top journal just a week before she passed away. I wasn't able to tell her in person due to her hospitalization, but her mom told me the news bought a smile to her face. My research group and I will miss her very much."

Guo

Heng "Nikita" Guo, an MBA student in MIT's Sloan School, passed away on October 26th in her apartment in Cambridge. The 28-year-old was discovered by her husband, Bochao Zhang; her death was ruled a suicide by the Medical Examiner's office.

Guo was expected to graduate from Sloan in 2013. She graduated from Texas A&M University in 2006, moved to New York City to work on Wall Street before enrolling in Sloan's MBA program in 2011. Guo was also the Founder and CEO of Natural Loong Group, a startup tackling preventative healthcare by combining technology and traditional Indian and Asian healthcare knowledge, according to Guo's blog as viewed in November.

"Such a loss of a promising young person is intensely painful," wrote President L. Rafael Reif in an email he sent to the MIT community following the tragedy. "Our hearts go out to Ms. Guo's husband and her family."

As always, members of the MIT community who feel affected by the deaths are encouraged to contact MIT Mental Health Services at 617-253-2916.

SOURCE: FACEBOOK

Brian G. Anderson '13.

SOURCE: FACEBOOK

Allison Tovo-Dwyer G.

PHOTO COURTESY OF MIT NEWS OFFICE

Heng "Nikita" Guo G.

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Institute Double Take

A unique look at campus

NORA VRUBLEVSK

1. La Grande Voile (Big Sail), the modern sculpture outside the Green Building, under a night sky. **2.** Reflections of buildings and the sky in the window of Legal Seafood at sunset. **3.** Spiders in their webs under the lights outside the Student Center. **4.** Cherry trees bloom in the spring behind Building 13. **5.** A high dynamic range (HDR) photograph of colorful MIT sailboats in Boston's Back Bay. **6.** A barred owl perched in the East Campus courtyard.

2

TIFFANY HUANG—THE TECH

Changes to the freshman experience

Record low acceptance rate, highest SAT scores for class of 2016

By Kath Xu
STAFF REPORTER

For freshmen, the MIT experience begins as soon as they are admitted. A record-low 8.9 percent of applicants were admitted to the Class of 2016, and 70 percent of those admitted accepted their offer of admission. Because of the record high yield rate, no one was admitted from the waitlist for the first time in seven years.

The Class of 2016 came in with more underrepresented minorities than any previous class, a higher percentage of women, and the highest admitted SAT score averages. It was also the first class to experience new FPOPs, changes to the housing adjustment system, and edX. Here's a look at some of the biggest changes the freshman class saw this year.

FPOPs

Before the start of Orientation, freshmen are given the choice to participate in a freshman pre-orientation program (FPOP). FPOPs took place a few days directly before Orientation began. According to the Review Committee on Orientation (RCO)'s report last year, FPOPs "play an important role in connecting first-year students with one another, forming friendships, and putting freshmen in touch with participating faculty, advanced undergraduates, and graduate students."

Elizabeth Young, the Associate Dean of New Student Programs at the Undergraduate Advising and Academic Programming (UAAP) Office, estimated that about half of the freshman class participates in a FPOP each year.

> **The Institute started charging FPOP students a housing fee of $30 per night.**

This year, all of the FPOPs began on either Wednesday or Thursday, and ended on Sunday in time for other social activities in the evening, effectively shortening some of the longer FPOPs, such as Freshman Urban Program (FUP) and Freshman Leadership Program (FLP). The Institute started charging FPOP students a housing fee of $30 per night for a maximum of four nights. In previous years, housing was provided for free while students were in their FPOPs.

In addition, at the beginning of their FPOPs, all students were briefed on MIT's health and safety resources. These changes were all included in the RCO's recommendations last spring.

Two new FPOPs were introduced this year: Discover Aerospace (DA) and Discover Entrepreneurship and Leadership (DEAL). MIT's AeroAstro Department sponsored Discover Aerospace, in which students designed and built their own rockets, toured AeroAstro research labs, and dined with student and faculty members of the department.

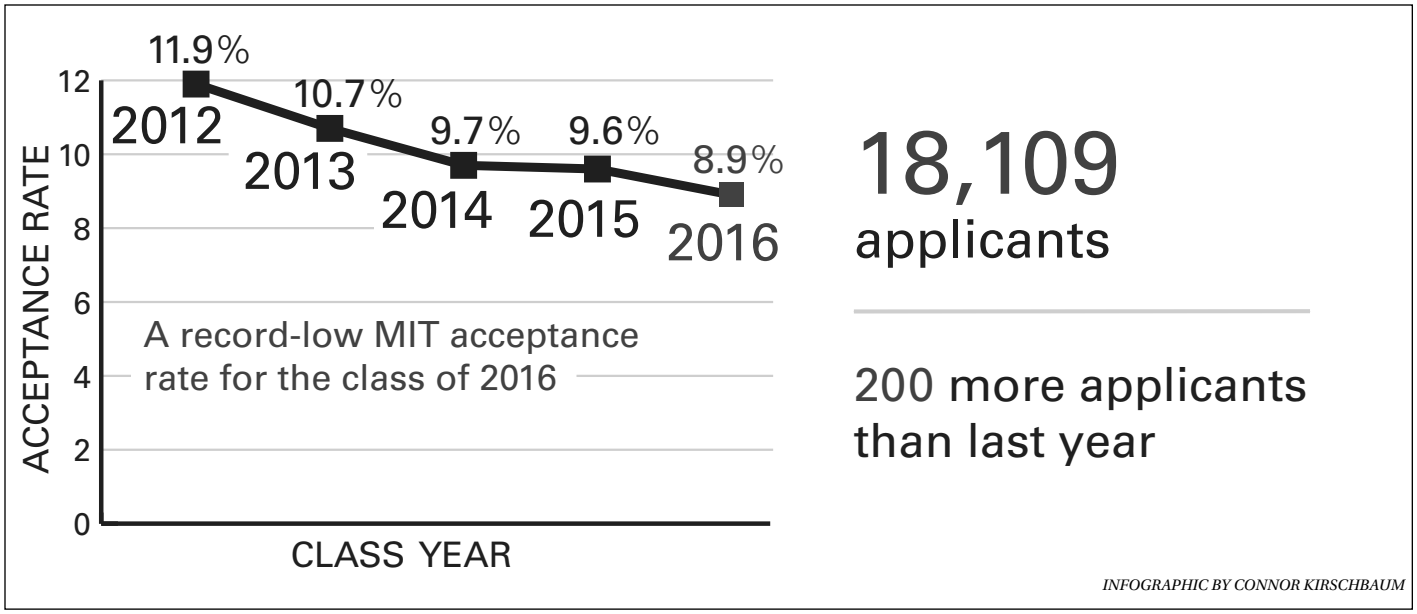
In contrast, Discover Entrepreneurship and Leadership was sponsored by a group of MIT undergraduates with the goal of introducing freshmen to some of the resources available at MIT for budding entrepreneurs.

Jin Pan '16, who participated in Discover Entrepreneurship and Leadership, spoke favorably of his experience there.

"DEAL introduced me to some of the most amazing people and resources I've found on campus so far," said Pan. "Listening to presentations from Bill [Aulet] of the Trust Center and other amazing individuals really inspired me to dream big."

REX and Orientation

Over the summer, freshmen input their top dorm choices into a lottery-based sys-



INFOGRAPHIC BY CONNOR KIRSCHBAUM

tem to receive their housing assignments before arriving on campus. During Residence Exploration (REX), freshmen were given the choice to change their dorm assignments if they were unhappy about their living situations. The RCO recommended de-emphasizing the adjustment lottery during this year's REX period, and instead focused on welcoming freshmen to campus, "both to their individual dormitory communities and to the campus residential community as a whole."

The RCO recommended de-emphasizing the adjustment lottery during this year's REX period.

In the past, freshmen who wanted to stay where they were had to actively confirm their decision. This year, students remained in their dorm by default. MIT introduced the First Year Residence Exchange (FYRE) for students who wished to move, a rebranded version of the previous Housing Lottery Adjustment.

While roughly the same percentage of this year's freshmen (14 percent) participated in the adjustment lottery as last year, only 60 percent of this year's students were granted their requests to move. 80 percent of students were reassigned the year before.

In addition, CityDays was removed from Orientation this year, resulting in a lower overall turnout than in previous years. The report by the RCO recommended that "the service program be offered during the academic term when there is the opportunity for full community engagement." While around 600 freshmen participated in CityDays last year, fewer than 100 chose to do so this year.

"Removing CityDays from Orientation definitely negatively affected the program," Dorian A. Burks '14, an organizer for CityDays, told *The Tech* in the fall. "Having CityDays later, and with everyone already having their own schedules, there was less of an opportunity for student leaders to step in."

Academic credit policy

Rather than registering for their fall classes using the old-fashioned method of pen and paper, freshmen joined the upperclassmen in registering their classes online this year.

"The registrar office has been working on updating things. Last year was the first time first-semester freshmen did not use a paper-based system," said Young. "They were doing what the upperclassmen had been doing for a while."

This past fall also marked the first time that MIT started exempting students who scored a 7 on the IB English Higher Level exam from having to take the Freshman Essay Evaluation (FEE). Five students submitted scores of 7 on the IB English Higher Level exam, according to Kathleen L. MacArthur, the Assistant Dean for the Communication Requirement.

Additionally, he said that MIT's Department of Earth and Planetary Sciences decided to implement a minor change in credit policy. Course 12 now grants 3 units of general elective credit for an "A" grade on the Cambridge A-Level Geography exam. According to Pepper, two members of the Class of 2016 benefited from this policy change.

edX

Last semester, freshmen who took 8.01 (Physics I) in Experimental Study Group (ESG) or Concourse made substantial use of edX, a new online learning platform launched just last year. Concourse Lecturer Saif Rayyan and ESG Lecturer Analia Barrantes helped develop the online content for their classes.

Each week, students completed online reading questions to help introduce basic concepts, freeing up class time to focus on problem-solving. Students in the freshman-heavy 3.091 class (Introduction to Solid-State Chemistry) also made use of edX, but on a much smaller scale. Before each lecture, students needed to answer one multiple-choice reading question.

"One of the main reasons we are using edX is the great potential of being able to collect more data about student performance," Rayyan told *The Tech* last semester. "In the future, we would like to enable the teacher to look at performance data on the assignments before class, figure out what concepts were harder for the students, and adjust the presentation during class."

MIT 2030 plans continue to develop

Faculty concerns, proposals consolidated in committee report

By Janelle Mansfield
ASSOCIATE NEWS EDITOR

Twenty years ago, MIT's campus looked vastly different. Maseeh Hall was a graduate dorm called Ashdown House, planning for Simmons Hall had yet to begin, Kendall Square was a quiet area recently abandoned by manufacturing companies, and the Edgerton Center had just opened.

Since then, tech companies such as Google and Microsoft have opened offices in Kendall, biotech and pharmaceutical giants such as Pfizer and Novartis have staked a large foothold in Cambridge, and MIT continues to open new academic and research oriented spaces, such as the Koch Institute for Integrative Cancer Research and the Sloan Business School's E62, the greenest building on campus, both of which opened in 2011.

Members from the MIT community have been encouraged to submit their input about the physical futures of campus as well.

Given that MIT's campus is so dynamic, the MIT administration and the MIT Investment Management Company (MITIMCo), which controls MIT's real estate holdings in Cambridge, began developing a broad vision for the future use of MIT land and buildings, as well as potential renovation and building projects. This planning began in 2008 with the Academic Council, which consists of senior Institute leadership and the Chair of the Faculty, and slowly grew to encompass more people at MIT and more detailed plans for use of physical space to address MIT's needs. These plans and developments evolved into MIT2030, a term first used by former MIT President Susan J. Hockfield in 2011.

The 2030 Process

According to the MIT2030 website, MIT2030 is not a plan but a "framework" — a process for integrating an idea into the Institute's list of future projects.

The process begins with identifying goals and priorities. This first step involves the Department of Facilities, the Office of the Vice President for Finance, and MITIMCo. A group appointed by the Committee for the Review of Space Planning (CRSP) and the Building committee will then research possible ways to achieve these goals and give recommendations to the two committees. After this, if the Executive Committee of MIT approves the project it becomes part of MIT2030 and proceeds to the capitol planning stage.

Members from all over the MIT community have been encouraged to submit their input about the physical futures of campus as well. The 2030 website encourages site readers to send comments and ideas to mit2030-ideas@mit.edu.

Previous Executive Vice President and Treasurer Theresa M. Stone SM '76 told The Tech in 2011 that input from "broad sectors of the community" will continue to be solicited throughout the process . Despite these statements, faculty have expressed concern that the most powerful force behind MIT2030 planning is financial motivation from MITIMCo and that the framework does not place enough importance on academic needs.

Overarching Goals

MIT2030 plans address areas both on and off-campus. In the academic sector, two new research facilities, one for energy and environmental research and the other for nanoscale research, are both in the planning stages. The Institute is currently evaluating several potential sites for the new labs. MIT also plans to renovate several academic buildings including Walker Memorial, Buildings 41-43, 2, and E52. These "capital renewal" updates will refurbish systems, infrastructure, roofs, elevators, interior finishes, and other maintenance, according to the MIT2030 website.

Students may also see capital renewal and renovation of Kresge, the Student Center, Burton-Connor and MacGregor.

Stone said the expected cost of the first wave of academic development includes $500 million for the construction of new laboratories and $1 billion for renovation and capital renewal. This will be funded in part by $750 million worth of 100-year taxable bonds recently sold by MIT to "high quality institutions" like insurance companies and money managers, said Stone. She added that MIT hopes to pay for the rest through fundraising and alumni donations.

Off-campus, MIT2030 plans will attempt to draw more technology companies to the Cambridge area, and create a more lively atmosphere in Kendall Square. Recent biotech and information technology offices opening in the Cambridge area are a good start towards accomplishing this goal.

MIT2030 will hopefully encourage not only technology firms to move to Kendall, but more retail and dining options as well. For example, the Pfizer Building at 610 Main Street, to be completed in 2013, will incorporate 10,000 square feet of street-level retail space. One of the goals of 2030 is to enliven the Kendall Square area, a goal shared by the city of Cambridge, which is currently working on a future development plan of its own, called K2C2.

Faculty Concerns

Beginning in late 2011, faculty expressed concerns over MIT2030 plans. The concerns centered on plans to lease land previously reserved for academic use for other real estate uses, such as renting out to tech firms in Kendall Square. These concerns led to the creation of a faculty task force to evaluate the 2030 plan and provide recommendations for changes.

In the November/December 2011 faculty newsletter, the FNL editorial board said that although MITIMCo can evaluate the financial side of real estate usage, they are "not in a position to balance the financial implications of long-term planning with the future academic needs of MIT."

The editorial board also criticized the lack of a faculty committee. Some faculty sit on the committees that are part of the MIT2030 framework; however, the editorial board felt that "we need an Institute committee with full faculty representation…considering all the diverse requirements of maintaining a vibrant university committee."

Faculty Chair Samuel M. Allen also wrote an article in that issue of the FNL, emphasizing the importance of maintaining a valuable on-campus experience for students amidst the proliferation of online education systems like MITx. The way to do this, he said, was to focus on lab space, academic facilities, and student housing.

At the May 16 faculty meeting, a group of nine faculty members, led by Professor Jonathon A. King (Biology), expressed concern "that the MITIMCo 2030 plan to develop this last remaining campus resource as commercial space will irreversibly limit and constrain MIT's future development. This is the only space left for campus educational, recreational, housing, or research facilities. The Graduate Student Council has explicitly raised concerns over the absence of significance graduate housing in the MITIMCo plans."

As a result of faculty pushback, Provost Chris Kaiser created a faculty task force in August 2012. In October, the task force, chaired by Professor Thomas A. Kochan, published a report addressing the main problems they saw with MIT2030.

The report advised "financial return should not be the principal criterion of value creation and success for this area of campus. Equally important are criteria related to the 21st century image of MIT, creation of a significant eastern gateway to the campus, the enhancement of student life, and providing opportunities for future academic buildings and activities that we have yet to invent."

Faculty have been clear that the future academic needs of MIT are difficult to predict, and flexibility is needed in planning for such facilities.

Faculty have been clear that the future academic needs of MIT are difficult to predict, and flexibility is needed in planning for such facilities. The report recommended changes to MIT2030 including "More space for academic development and student life," specifically graduate housing and retail options that meet the needs of the student community.

Another key point made in the report was the need for "creative options" for preserving three landmark buildings on Main Street (E38, E39 and E48, the MIT Press, Rebecca's Cafe, and Kendall clock tower buildings, respectively), which the city of Cambridge may designate as historical landmarks. However, the faculty committee noted, "this significantly constrains the design and development of this space."

MIT decided to take into account faculty feedback. While the Institute had submitted a Kendall Square zoning proposal to the city of Cambridge in April 2011, it allowed the proposal to expire and submitted another proposal in December after receiving the task force's input. The zoning proposal from MIT is a recommendation to the city on what portion of real estate it should allocate to retail, parking lots, open spaces, etc.

According to the MIT News website, "The petition requests rights to increase permitted density of commercial development in the target area while preserving existing capacity for future academic development."

Provost Chris Kaiser responded to the task force in an email to the faculty, saying the Institute will take their opinions into account and "launch a participative conceptual design process to examine the potential of the gateway area", exploring options with and without the landmark buildings. He added that the task force will work with him in the future on creating a development plan for all of the east campus region and analyzing MIT's housing needs.

Relation to Cambridge's K2C2

The Cambridge City Council has been conducting a similar planning process involving Central and Kendall Square, called K2C2. This study gives recommendations related to proportions of housing and commercial space, sustainability considerations in building, and community benefits.

The Kendall Square part of the K2C2 study has reinforced MIT2030's goals of enriching the retail side of Kendall. Since this area can be very quiet during the day, as a result of real estate used mainly for office space, MIT's plans to increase retail and living space there have been buttressed by the K2C2 analysis.

In its latest zoning proposal, MIT suggested maximizing residential space at its One Broadway extension to build 300 units of housing, up from the previous 120 units. Whether that housing would be graduate student housing or not was not mentioned.

MIT will also donate $4.3 million to the City's Affordable Housing Trust.

MIT additionally proposed more ground-floor retail, suggesting in its zoning petition that 75% of ground level space along Third St., Main St., and Broad Canal be put towards "active uses", such as retail and "institutional uses open to the public."

Other K2C2 changes MIT incorporated in its latest proposal include restricting building size at higher heights , requiring a portion of the taller buildings to be used for middle income residential housing, requiring new commercial buildings to meet LEED Gold environmental standards, and reserving five percent of office space for startups.

Current Progress

On the first Tuesday in December 2012, MIT executives and MITIMCo presented MIT's updated zoning proposal to the Cambridge Planning Board. The K2C2 results related to parking space allocation were also presented to the board at this meeting.

MIT's changes to the zoning petition attempted to address faculty and student concerns. MIT proposed double the minimum amount of residential space to 240,000 square feet, and decreased the amount of hotel and lab space from its previous proposal. Although the amount of residential space increased significantly, the low and moderate income housing requirement was only increased from 42000 square feet to 48,500 square feet.

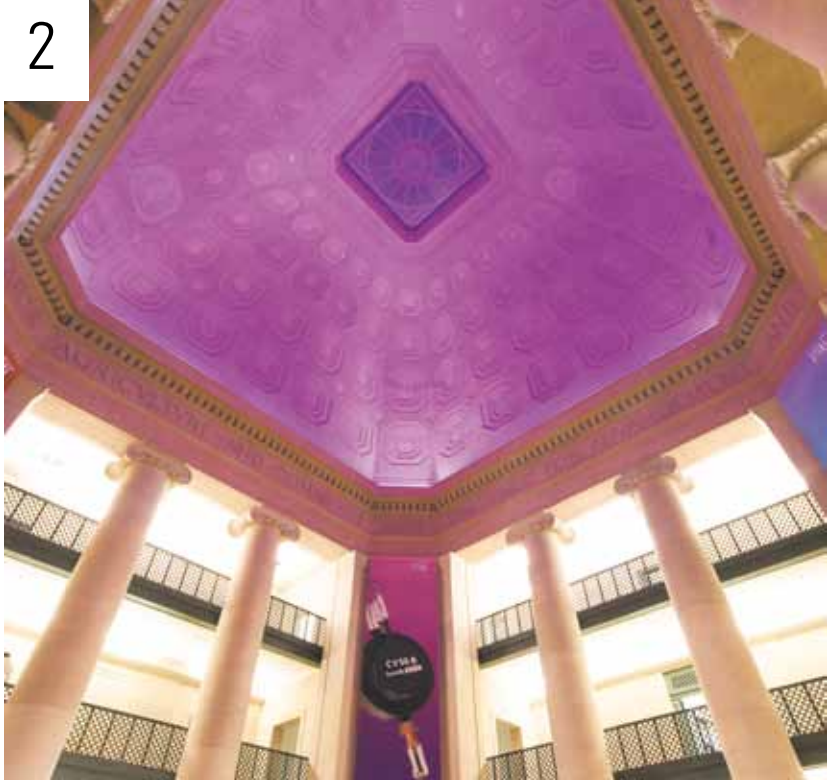
The day before the meeting, faculty expressed their concern about the revised petition in two letters, one addressed to MIT President L. Rafael Reif and Provost Kaiser, and the other addressed to the City of Cambridge Planning Board.

Ten faculty members collaborated on the letter to the Cambridge Planning Board. They reiterated their concern that "emphasizes return on real estate investment through commercial development of irreplaceable campus land, at the expense of MIT's educational and research needs…this use of limited campus land for commercial development will undermine MIT's unique abilities to contribute to solving national problems through education and advanced research, and it will dilute its contribution to the Cambridge community."

Eight of the fifteen members of the FNL editorial board wrote the letter to President Reif, which called the zoning presentation "an attempt to 'end run' student and faculty input and implement MITIMCo's current version of how MIT's Cambridge real estate should be developed."

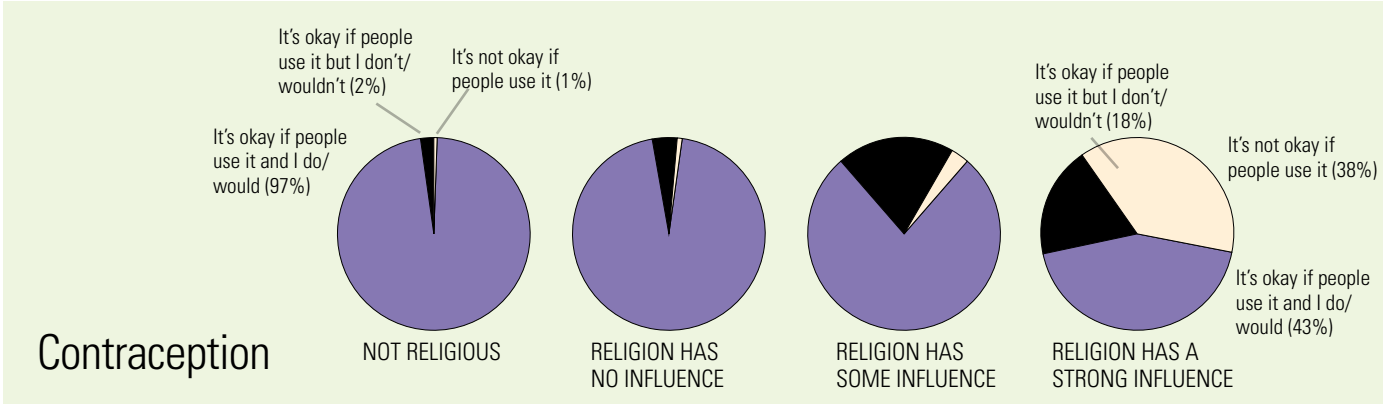
However, after a meeting with the 2030 faculty task force the next day, the second faculty group retracted their statement to President Reif. They wrote a second letter saying it was "sensible to have MIT move forward with the proposal for up-zoning."

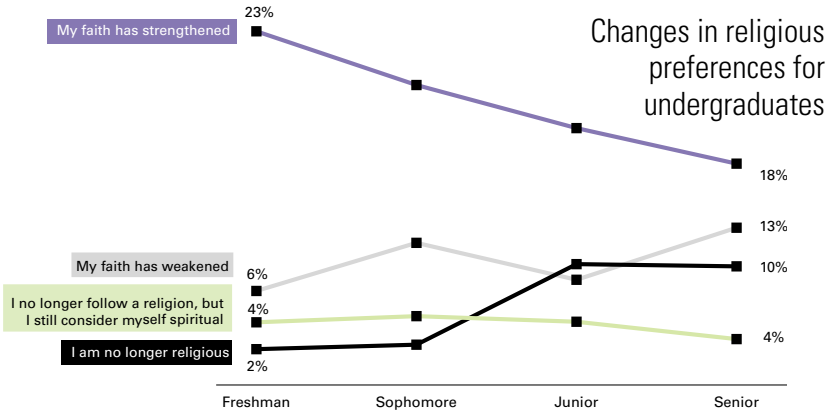
Management Professor Gordon A. Kaufman, who contributed to both letters, did not speak to The Tech, but said more discussion would be available in the next Faculty Newsletter.



Hacks at MIT

1. A Dalek, a genetically engineered organism from the TV series Doctor Who, perched on the Stata Center.
2. Lobby 7 lit in purple light for the Relay for Life, a major fundraising event for the American Cancer Society.
3. A pair of eyes on Building 7.
4. Students and prefrosh alike were able to play a fully functional game of Tetris on the Green Building over Campus Preview Weekend last spring.
5. A fake bomb hangs in Lobby 7 to advertise the Dance Till You Drop (DTYD) party held by the Burton Third Bombers.





At an Institute so grounded in science and technology, where do faith and spirituality fit in? During the spring, *The Tech* surveyed 2,943 undergraduate and graduate students at MIT — about 27 percent of the student population — on their religious life. 1,295 (44 percent) were undergraduates. Here are a couple infographics from our special.

Survey Says... 2012 editions

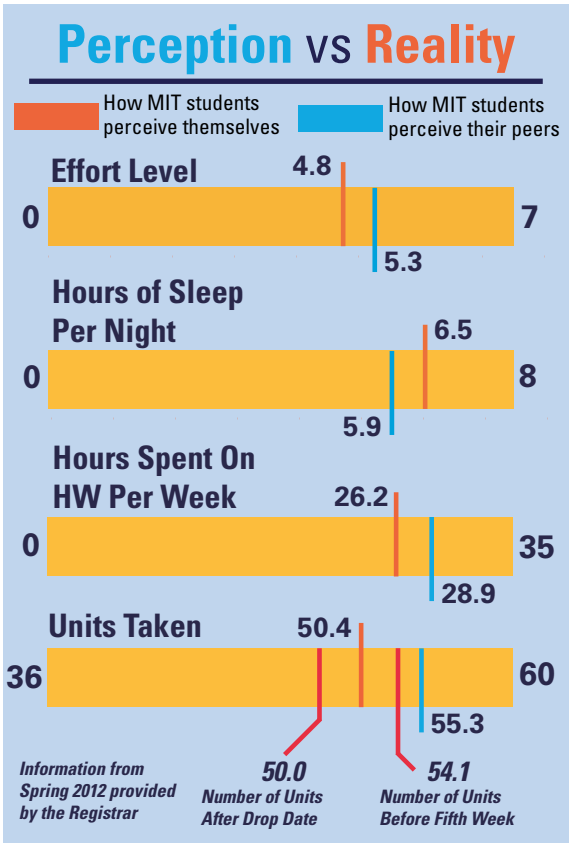
At a fast-paced school so reputed for intense work and constant innovation, where do individual students fit in? Last fall, *The Tech* conducted a survey on pressure at MIT. 3,191 undergraduate and graduate students at MIT — about 29 percent of the total student population — responded. 35 percent of undergraduates responded (1,569 students). We found that on average, MIT students think their peers work harder, sleep less, and take more classes than they do.

What are the "hardest" courses?

Ranked by the number of times each course was voted for as a "hard" or "easy" course, here are the top 5 for each category. Stress was on a 1–7 scale.

Rank	"Easiest" Courses	"My course is one of the hardest"	Stress Level
1	Course 15	20.3%	4.81
2	Course 21	0.0%	4.50
3	Course 9	1.4%	4.69
4	CMS	0.0%	4.91
5	Course 24	11.1%	4.76

Rank	"Hardest" Courses	"My course is one of the hardest"	Stress Level
1	Course 6	29.2%	4.59
2	Course 10	10.8%	4.76
3	Course 16	10.3%	4.67
4	Course 8	11.5%	4.38
5	Course 2	27.7%	4.66



Forces of nature converge on campus

Earthquake, hurricane, fire, and power outages occur over year

By Jessica J. Pourian
EDITOR IN CHIEF

Despite the blatant lack of the anticipated apocalypse, 2012 was a good year for disasters. Last year saw several out-of-the-ordinary occurrences, including a hurricane, two major power outages, and a small earthquake.

Fire in Boston

March 13, 2012 saw the Boston skyline go dark after a major transformer failure in the Back Bay, causing a three-alarm fire that destroyed the parking garage of the Back Bay Hilton and left over 21,000 people without power.

Much of the city lost power; from Citgo all the way to the Public Gardens. Seventeen MIT fraternities, sororities, and independent living groups (FSILGs) lost power from that Tuesday night until late Wednesday and Thursday evening. The over 400 students affected by the outage were invited to stay on campus if they needed power. According to Dennis Collins, Director of Housing, the Housing Office keeps a list of spare rooms and cots in case of emergencies.

The problematic transformer was in the Scotia Street Substation, near the parking garage of the Back Bay Hilton. The cause of the outage was a connector failure between the high voltage transmission system and the substation.

The Back Bay fire came two days after a two-alarm forest fire in Fenway, which burned for 30 minutes and spread ash throughout Boston. The lack of snow last winter and the recent warm weather made the brush particularly dry — creating conditions ripe for fire.

Earthquake!

A small 4.0 earthquake hit New England on Oct. 16. Its epicenter was in Maine, which started shaking at 7:12 p.m. There was no reported damage, and Cambridge residents only experienced weak shaking. Students around campus were surprised, and mailing lists were abuzz with chatter. "Next House is made of jello," wrote one student.

This quake was the first to be felt in the area since August of 2011, when a 5.8 tremor traveled from Virginia to shake Boston in its most powerful earthquake in 67 years.

Hurricane Sandy

Oct. 20, 2012, MIT closed due to worries about Hurricane Sandy. Classes were officially canceled, and all non-essential personnel were off work for the three shifts of the day. Urgent Care remained open, though the rest of MIT Medical closed.

The MBTA was closed by 2 p.m., and the U.S. stock markets closed in preparation for the storm as well. This was the first market-wide shutdown since September 2001 (and the first weather-induced shutdown in 27 years), and the market also remained closed on Oct. 31.

Sandy brought winds of over 65 miles an hour to Massachusetts, with the Green Building weather station monitoring gusts peaking at 40 mph. Sandy was the second largest Atlantic Storm in the past 24 years (which is how long hurricane data has been tracked), having broken Hurricane Lili's record from 1996. Tens of thousands of homes in Massachusetts lost power, to say nothing of the incredible havoc wrought on New Jersey and New York. Many places around the northeast are still feeling the repercussions of the storm, and damage is visible throughout the eastern seaboard.

MIT was one of the many schools to shut down for the day. All public schools in the Boston metropolitan area were closed, and a number of other colleges — including Harvard University, Boston University, Babson College, Wellesley College, and Northeastern University — shut operations down on Monday in preparation for Sandy.

Hurricane Sandy was touted as the second "Perfect Storm" after the deadly storm of 1991, which inspired the 2000 film of the same name starring George Clooney and Mark Wahlberg.

Cambridge power outage

The other side of the Charles River experienced a power outage in 2012 as well. On Nov. 29, MIT, Harvard, and the surrounding area lost power from 4:26 to 6:37 p.m. due to a downed transmission line. Nearly 17,000 NStar customers were estimated to be without power.

All non-essential power was cut around campus. Lights remained on in dormitory hallways and stairwells, though rooms were dark. A number of lights in the Infinite and street lamps around MIT were also off. MIT Medical shut down normal services and switched to Urgent Care.

Rumors swirled about a deer that had been struck near the Kendall Tunnel and caused the trouble. The rumor originated on Twitter and was false.

Students gathered in hallways and a number of classes and tests were canceled in response to the outage.

CHRISTOPHER A. MAYNOR—THE TECH

ARTS IN REVIEW

Neither the economy nor the impending flu epidemic cast their gloomy shadows over the 2012 arts scene, especially in the Boston area. MIT established the Center for Art, Science & Technology and awarded the Eugene McDermott Award to multidisciplinary artist Robert Lepage, who is now an MIT artist in residence and will use the $80,000 prize to further his work in nearly every form of theater craft.

On the other side of the river, The Boston Ballet re-vamped their Nutcracker with all new costumes, sets, and choreography. Legendary Georgetown Cupcake opened on Newbury Street, taking the city's cupcake-craze a little further. PSY's Gangnam Style music video released last summer now has the most views in YouTube history. The 2012 Burning Man festival had more interest that ever; over 120,00 tickets were requested, versus the 40,000 that were available. The top-rated films of the year were mostly melancholy or historical (*Silver Linings Playbook, Zero Dark Thirty*, etc.), while the top-grossing films were mostly family-friendly hits featuring superheroes (*The Avengers, Batman, Spiderman, Hunger Games*, etc.). *The Tech* shares it's favorite moments in art from the year.

—Grace Young

AKIMITSU HOGGE—THE TECH

AKIMITSU HOGGE—THE TECH

Sam P. Heilbroner '13 performs with the festival Jazz ensemble in the annual family concert, a joint concert held with the MIT Wind Ensemble in celebration of Family Weekend last October.

Hackers are caught on the Dome in the MIT Musical Theater Guild's production o

Arts on Campus

2012 had quite a number of exciting arts events on campus. The List Visual Arts Center presented *In the Holocene*, an exhibit that explored mathematical and scientific concepts from an artistic point of view. MIT students produced a parody of the Gangnam Style video that was featured on YouTube's front page. Students wrote, orchestrated, and acted in an original new musical *Hack, Punt, Tool*. Both DanceTroupe's winter performance *50 Shades of Plie* and Dramashop's plays packed little Kresge many times. 2013 looks bright with arts coming from the List and students alike.

BRIAN HOFFER

The Kerf Pavilion, installed near the Green Building last October as part of the Pavilion project, created spaces to sit and enjoy quieter moments on campus.

JAX KIRTLEY

f *Hack, Punt, Tool.*

EMILY KELLISON-LINN—THE TECH

MIT Bhangra performs in the Student Center in November at Ring the Alarm, an annual dance competition held by Mocha Moves with competing teams coming from colleges all over the Boston area. MIT Bhangra won the competition.

TIFFANY IRA HUANG—THE TECH

Protagonist Bobby Strong (Trevor J. Mulchay '15) leads a rebellion last May in the MIT Musical Theatre Guild's production of *Urinetown*, a "tale of greed, corruption, love, and revolution."

EDDIE HA

(Right to left) Youngsoo Jang '15, Ingwon Chae '14, and Richard C. Yoon '13 take a break during filming the MIT Gangnam Style video that went viral this last semester.

PRIYA GARG—THE TECH

Anjali B. Thakkar '12 (far back) performs with members of the Abhinaya Dance Company, hosted by MIT Natya last spring. The concert paid homage to various women from Hindu mythology.

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Scene from Golden Globe winning Les Misérables, released Christmas Day 2012.

The Best Films of 2012

The highlights of the silver screen

By Arts Staff

Amour: A poignant portrayal of Georges and Anne, an old couple living quietly in Paris. After Anne has a stroke, Georges cares for her until the bittersweet end. The film is rich in detail, and the acting is compelling. Emmanuelle Riva is unforgettable as Anne, and we empathize completely with Jean-Louis Trintignant as Georges. Anne's relentless deterioration in health and Georges' decisions to cope with it are sensitively and heartachingly depicted. The film says "there may be no dignity in death, but there can be love". —*Angie*

Argo: This R-rated dramatization of the 1980 Iranian hostage crisis won best drama and best director at the Golden Globes, so it has to be good. Produced by Ben Affleck, George Clooney, and Grant Heslov, stars in the film include Ben Affleck, Bryan Cranson (Breaking Bad), and Victor Garver (Downton Abbey). The story centers around the secret operation to extract six fugitive American diplomats out of revolutionary Iran. The ploy, devised by CIA special agent Tony Mendez (Ben Affleck), involves the fugitives disguising themselves as a Canadian film crew. The film keeps audience members at the edges of their seats and showcases the brilliance behind the CIA-Canadian operation. —*Grace*

Silver Linings Playbook: *Silver Linings Playbook* gives refreshingly honest insight into the lives of people struggling with depression and loss. David O. Russell's sharp screenplay unfolds a believable story about a man recovering from a manic episode who meets a woman dealing with the death of her husband. Bradley Cooper, Jennifer Lawrence, and Robert De Niro round out an impressive cast, and each brings great depth to their characters. The film succeeds in capturing the realism in the relationship between Lawrence's and Cooper's characters—moments range from comedic to devastating. There's a reason why this film is dominating this awards season. —*Jaimie*

Looper: If you're in search of great entertainment, *Looper* will fill that prescription. The film avoids being muddled by the confusing nature of time travel while still requiring some thought. Joseph Gordon-Levitt plays a "looper," an assassin who ties up loose ends by killing and disposing of bodies, an occupational hazard being that when your future self is sent to you, you must kill and dispose of him as well. Director Rian Johnson successfully creates an alternate reality, and the special effects are utilized in innovative and unexpected ways. The twist ending elegantly ties into the philosophical questions the plot raises. —*Jaimie*

The Dark Knight Rises: The last installment of the Christopher Nolan's Batman trilogy, *The Dark Knight Rises,* is an epic in terms of both its length and its production quality. Although not as mind-blowing as many had hoped, the film still provides viewers with just the right amounts of fight scenes, witty superhero lines, and tear jerking moments. The film also succeeds in depicting how far Gotham has fallen since the first film. Once you get over how ridiculous (the villain) Bane's voice is, the film is a perfectly adequate end to a great series. Anne Hathaway did all right too. —*Jaimie*

Cloud Atlas: Although it was deemed a box-office bomb, Cloud Atlas is what film should aspire to be. It is unconventional, confusing, and controversial, which will translate into an eventual cult following — but give it a chance now. The film follows six different stories in different genres, time periods, and locations, and it uses interconnectivity between the stories to represent the human quality of being connected. Breathtaking cinematography, philosophical questions, and emotionally wrenching scenes help the film transcend the silver screen and make you question your own life's meaning. You may be confused the first time around, but it's worth a few watches. —*Jaimie*

Les Miserables: Director Tom Hooper does justice to Victor Hugo's 1862 novel and the longest-running musical in history. Set in 19th century France, the story follows Jean Valjean (Hugh Jackman), an ex-convict who breaks his parole to make a new life for himself. He takes custody of Co-

COURTESY OF WARNER BROTHERS

sette, the illegitimate daughter of the dying Fantine (Anne Hathaway), but his identity is revealed and he flees to evade the zealous pursuit of Inspector Javert (Russell Crowe). Interestingly, in a non-traditional method, the film's vocals were recorded live, with the actors guided through earpieces by live piano accompaniments, and the orchestral accompaniments were recorded in post-production. Riveting solos, majestic (or perhaps "revolutionary" is more apt) sets, light relief provided by Sacha Baron Cohen and Helena Bonham Carter — the result is an enjoyable two-and-a-half hour musical romp. —*Angie*

Lincoln: *Lincoln* is a gripping historical drama about Abraham Lincoln's struggle to pass the 13th Amendment and end the Civil War. Daniel Day-Lewis gives a superb performance as the beloved president, who always has a twinkle in his eye and a story to tell. His dilemma is choosing between two courses of action: making peace and dooming the Amendment, or delaying peace, risking lives, and politicking for all his worth to gain support in Congress, and change history. Well, you know what happens, but director Steven Spielberg skillfully maintains the suspense throughout, interspersing moving family scenes with tense political episodes and touching public moments. —*Angie*

Seven Psychopaths: This British comedy has a star-studded cast, which includes Colin Farrell, Sam Rockwell, Christopher Walken, and Woody Harrelson. The story follows a writer struggling to complete his screenplay "Seven Psychopaths" by seeking inspiration from real-life psychopaths. The film's offbeat humor and meta-fictional flavor is a breath of fresh air from the run-of-the-mill comedies that Hollywood has been churning out. For once, the storyline is at the forefront, and the plot is unique and unpredictable. The casting is the best part, as many cast members have the same sense of humor, making the film all the more enjoyable. —*Jaimie*

Safety Not Guaranteed: This charming indie was inspired by a real classified ad that read:

Wanted: Somebody to go back in time with me. This is not a joke. P.O. Box 91 Ocean View, WA 99393. You'll get paid after we get back. Must bring your own weapons. Safety not guaranteed. I have only done this once before.

In her first leading role, Aubrey Plaza, of *Parks and Recreation* fame, drives this film with her deadpan expression and hilarious intensity. The story follows Plaza's character, an intern at a local newspaper, as she meets and befriends the author of the classified ad. With its quirky storyline and charming quality, Safety Not Guaranteed is the indie film at its best. —*Jaimie*

Ai Wei Wei: Never Sorry: Chinese artist and activist Ai Wei Wei has gained international renown for challenging the Chinese government on human rights issues. Following Ai to his studio and on his journey to identify all student victims in the 2008 Sichuan earthquake, the film reveals the raw consequences of holding "unpopular opinions" in China. The film's loose narrative includes Ai's important early years in the New York art world, the rise and fall of his influential blog, and his newfound Internet home on Twitter. *Never Sorry* is an important look into not only contemporary China, but also the meaning of art and social responsibility. —*Jenny*

...and on the silver screen

This was big TV year for me because I actually started watching it.

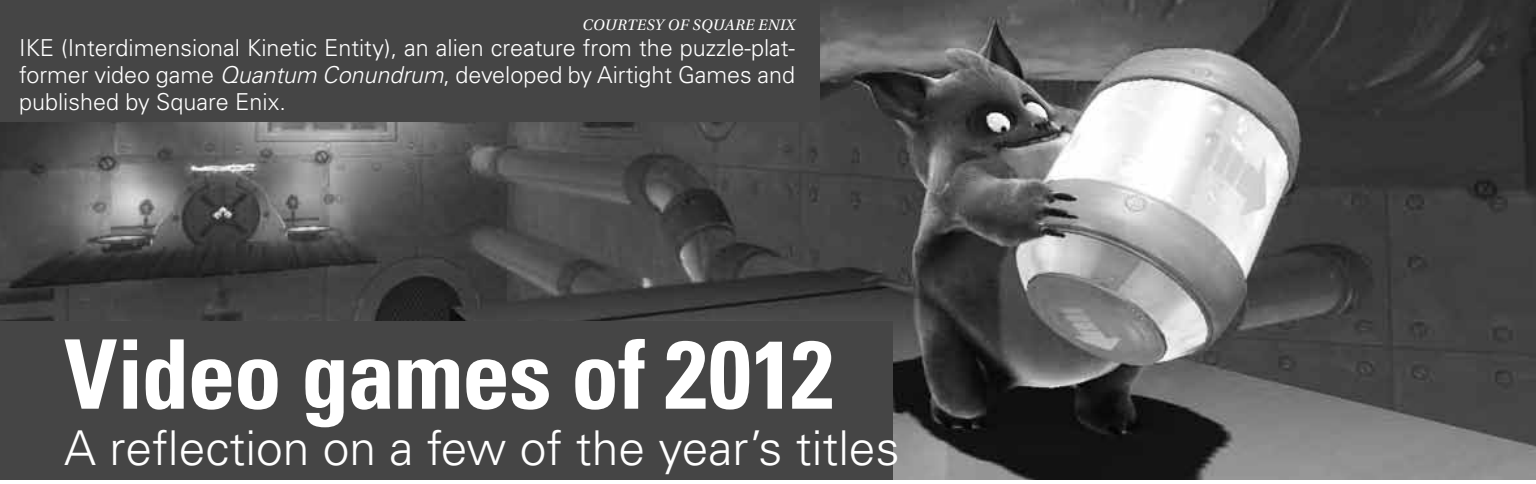
New Girl, starring Zooey Deschanel, was my favorite. It follows cute and quirky Jess (Deschanel), her three guy roommates and supermodel-best friend in a comedy of adventures. *Downton Abbey* was also a big hit, becoming the most watched British costume-drama series since my all-time favorite (and still incomparable), *Brideshead Revisited* (1980s). *The Big Bang Theory* was as geeky and funny as in previous seasons, I suppose, and will continue in 2013. *Nashville* premiered this fall as a sort of *Hannah Montana* for grown-ups, following a rivalry between two glamorous country music stars.

Breaking Bad finishes this spring to the dismay of many. I'm not a fan of the show, so will shed no tears. All the characters are either bitches or jerks. Its only funny parts deal with drug dealers, yet for whatever reasons, it's the object of widespread acclaim from professional critics and my friends, so it's worth watching a few episodes to see if you like it. It's probably the kind of show you need to watch from the beginning, however; so if like me you haven't watched it before this year, Netflix may be in order.

The mockumentary *Modern Family* is very funny and it will continue this season. Tina Fey's *30 Rock* concludes this spring after a long run, while several other shows continued the tradition of creator-as-star. *Girls* premiered with great success as a somewhat autobiographical young-woman-living-in-NYC drama created by and starring Lena Dunham. Also *The Mindy Project* premiered this fall to some acclaim staring its creator, comedian Mindy Kaling, the first South Asian-American to star in a US television series.

In the line of shows sexifying otherwise un-sexy careers, *Bones*, *Grey's Anatomy* and *General Hospital* are still on air; whereas *House* finally ended, although the *Mentalist* starring Simn Baker fills the genre of eccentric, high IQ foreigner solving complex problems in the America. Speaking of which, *Homeland*, starring sexy if slightly unbalanced CIA agent (Claire Danes) and an almost-as-sexy US Marine (Damian Lewis), won the Golden Globe for best television drama and will definitely return. You must take Hollywood's Foreign Press Association's word for it, however, as it didn't crack my still limited TV schedule. — *Grace*

COURTESY OF WARNER BROTHERS



COURTESY OF SQUARE ENIX

IKE (Interdimensional Kinetic Entity), an alien creature from the puzzle-platformer video game *Quantum Conundrum*, developed by Airtight Games and published by Square Enix.

Video games of 2012

A reflection on a few of the year's titles

By Jessica J. Pourian and Keith Yost

The Wii U

The first in the eighth generation of home consoles, the Wii U made it to shelves just in time for the 2012 holiday season. Nintendo's latest console is its first to have HD output, but there's a slow loading time for nearly everything. The system itself is sleek, and the newest addition, the gamepad, offers a new twist on console gaming. It allows one person a different view of the TV in what Nintendo is branding as "asymmetric gameplay." While the gamepad's touchscreen display is crisp, the controller is uncomfortable to hold for more than a couple hours and its charge depletes quickly. Despite these setbacks, the Wii U seems promising. Only time will tell if the Wii U can find its niche with hardcore gamers, and if the system can compete with the next generation of Playstation and xbox. —JJP

The gamepad gives one person a different view of the TV in what Nintendo calls 'asymmetric gameplay.'

Nintendo Land

Just as WiiSports was bundled with the Wii to demonstrate the system's motion control, *Nintendo Land* comes with the deluxe version of the Wii U to show off the gamepad's functionality. *Nintendo Land*'s core set of games is much more complex than those in WiiSports. The amusement park game is a compendium of Nintendo's most famous worlds — Mario, Metroid, Zelda and more—and features each player's Mii in each world. One of the best games to play with a group is "Animal Crossing: Sweet Day" in which players with WiiMotes are animals who frantically run to collect candy while the gamepad player tries to catch them. If you have a Wii U and don't have *Nintendo Land*, you should definitely purchase it. —JJP

Quantum Conundrum

Quietly released during the summer, *Quantum Conundrum* is a short puzzle platformer that is both hilarious and entertaining. The player is a nameless young boy who visits his uncle, Professor Fitz Quardwrangle, only to find him missing and his house in disarray. To rescue the professor, the player learns to switch dimensions using the Interdimensional Shift Devices. Like in *Portal (Quantum Condundrum* is directed by Kim Swift, of *Portal* fame), the end goal of each level is a door, but reaching it requires a great deal of puzzle solving and environmental manipulation. Though the game's story is simple, the professor's constant rambling in the background is entertaining, and will keep you smiling. —JJP

The Old Falter... (Mass Effect 3)

2012 was, at worst, a mixed bag for established video game franchises. Some did quite well: *Call of Duty: Black Ops II* was a pleasant surprise. *Assassin's Creed* had a respectable return, and *Borderlands 2* was one of my favorite games of the year. But in my mind, 2012 will go down as the moment when rehashing old successes stopped cutting it for game developers. It was the year *Halo* multiplayer got worse, all of the anticipation for *Diablo III* collapsed in a heap of disappointment, and when it became clear the developers of *Resident Evil* had absolutely no idea what they were doing. No game highlights this turning point more than *Mass Effect 3.* Barring the final few minutes when the game's lead writer had a combination stroke/acid trip, ME3 was everything I hoped for from Bioware. But despite the fun and challenging gameplay, the dramatic storyline, and the clever jokes delivered by Seth Green, all it took was three poorly written minutes at the end for me to mentally cross out *Mass Effect 3* as my game of the year. The lesson to developers: after 2012, if you aren't doing anything different, then you damn well better be doing it perfect. —KY

...The New Press On (Indie Games)

2012 was not the year of the indie gamer. 2011 holds that distinction, with the release of *Amnesia, Terraria, Bastion, The Binding of Isaac*, and dozens of other highly successful titles. But 2012 is the year that proves 2011 was not some errant fluke.

Journey and *The Walking Dead* topped more game of the year lists than offspring of the big developers, and several other indie games found themselves in the running, including *Fez, Spelunky*, and *Mark of the Ninja*. This phenomenon is the result of a confluence of events, including the maturation of digital distribution, the expanded funding channels for independent developers, and the opportunity created by unimaginative established developers. But no matter the reason, the continued rise of independent developers is a very good thing.

There will always be a place in my heart for the $60, high-production-value, 20-40 hour epics that only a deep-pocketed studio can produce. However, the ability to log on to Steam, purchase a game for $5-10 and start playing immediately makes for the better value proposition. It's not just that I'm spending a fraction of the money; it's also that I'm often investing less time getting an idea of whether or not I'll enjoy the game. And if I do enjoy it, there's a good chance I'll squeeze just as much playtime out of it as I would a *Skyrim* or *Halo 4*. —KY

OPINION IN REVIEW

2012 was marked by tumult and struggle. Thousands of Syrians were killed as an oppressive dictator clung to power. The conflict between Israelis and Palestinians was re-ignited. Europeans took to the streets to protest austerity measures. The devastation wrought by Hurricane Sandy was bracketed by the shootings of innocents in Aurora and Newtown.

But there were also moments of joy and inspiration. Scientists discovered a particle widely believed to be the Higgs boson. America sent a machine to Mars, and caught a man who seemed to plummet from the moon.

The Tech covered these stories and many others. But what made 2012 different, in our Opinion pages and columns, was our unprecedented effort to look inward, to address the problems we face as a student body, and as an institution. We explored what it means to be part of the MIT community.

Do meritocracy and diversity need to be reconciled? Or do they go hand in hand? How will MIT's online initiatives affect the value of a residential MIT education? Which decisions must the Institute make to ensure that it remains a world-class institution for decades to come? When addressing mental health concerns, should we enhance our efforts at community outreach, or question those efforts in order to foster self-reliance?

These questions may still lack definitive answers, but in the process of discussing them, we hope that we have all gained a better understanding of our different perspectives.

— Jacob London
Associate Opinion Editor

HO YIN AU—THE TECH

GUEST COLUMN

A student perspective on MIT 2030

MIT 2030 should be used as an opportunity to invest in the future

By Patrick Hulin

Over the past year, the Institute has been releasing "MIT 2030," its framework for land use and renovation for the next 20 years, and it contains some interesting and ambitious ideas for commercial development on and around the MIT campus. However, behind flowery language of an "innovation district" lie major problems with MIT 2030. In effect, the plan neglects the central mission of the Institute: to "advance knowledge and educate students."

MIT 2030 prioritizes making the most money off MIT's land and other resources. While there are two major proposed academic buildings, neither seem to fit into a broader vision — the vision is reserved for the commercial development going on around the campus. In particular, land that had been set aside for academic expansion for decades has suddenly been redesignated for commercial development at sites like that of the former Analog Devices building. Because it is so close to campus, MIT should recognize that this land has far more than monetary value — it is far more valuable for academic buildings to be close to campus, whereas commercial developments rightly value different things.

Why the sudden shift in priorities? It began in 2004, when the Institute split off the MIT Investment Management Corporation (MITIMCo), which would take responsibility for MIT's investments, including real estate. To encourage higher endowment returns, the employees of MITIMCo would operate with less oversight and be compensated on the standard Wall St. model: relatively modest salaries and huge bonuses tied to performance.

While this change has helped the endowment grow in size, it has had many secondary implications for MIT's future. Those with first responsibility for land resources now have only one goal, to generate as much income as possible off that land. With the dissolution of the independent Planning Office in 2000, no one in the administration is currently responsible for ensuring that MIT uses land with the long-term perspective in mind, and MITIMCo has a seat at every table.

For students, long-term issues like those of land use are still important, despite our short tenure here. Fundamentally, our degree's reputation rests on MIT's reputation for the next 50 years, not on its reputation now. Moreover, because the students who came before us fought to make our experience better, we should do the same for the next generation.

So, then, what do students want from MIT 2030? Certainly, it doesn't seem like anyone in the administration has asked this question. The list of projects for the next 10 years includes zero focus on students; for example, it totally ignores the pressing needs for dormitory renovations and better internet access for Boston fraternities, sororities, and independent living groups.

The Kendall Square Initiative, an important piece of MIT 2030, follows the pattern. Students want the neighborhood around MIT to be open for longer hours; Kendall essentially closes after working hours. The Initiative states that it wants Kendall to be an "extended-hours destination," but its proposals consist of academic and commercial space, with only a trivial 120 units of housing. Neighborhoods only come to life at night when people live there, so if MIT is really serious about transforming Kendall, there needs to be a real plan for building up the housing stock.

To be clear, MITIMCo is not doing anything wrong — they are just playing the game we have given them. I understand the pressures placed on the administration; the economy is not doing well, and deals like those with Novartis and Pfizer can be bright spots. That said, MIT cannot ignore the long-term. MIT must actually engage the community before doing things like locking down irreplaceable land in 60-year leases — a solitary Idea Bank will not suffice. At the very least, there should be a serious, faculty-led committee to review MIT 2030 planning at a high level. Space affects everyone, and no one should be sidelined.

At the end of the day, a two-word plan, "maximize revenue," does not live up to MIT's standards. MIT is not a financial services firm; it is a university, and it has serious responsibility to faculty, students, staff, and alumni. But more importantly, MIT is responsible to the world for generating ideas, and it shortchanges everyone when it puts short-term gain first. We can do better.

Patrick Hulin is a member of the Class of 2014.

SOURCE: MIT 2030 WEBSITE

A map of planned campus-wide renovations under the "MIT 2030" framework.

EDITORIAL

Understanding diversity

Seeking diversity is critical to MIT's mission

Many people hold a naïve conception of affirmative action and don't understand what it actually involves, yet they deem it a dangerous program that threatens our Institute. We believe that affirmative action is actually incredibly fair and integral to the success of any merit-based institution in the world we live in.

Affirmative action absolutely does not involve admitting unqualified students or faculty members to MIT.

Affirmative action is recognizing that there are still people who are prejudiced. It is understanding that discrimination still exists and has a real impact on people and their lives. It is taking a holistic view of admissions and faculty searches and considering individuals in their respective contexts.

Let's be clear: MIT is not suffering from a shortage of qualified applicants. Most of the students who apply are academically prepared to study here. Once applicants' preparedness has been determined, they are judged based on how they took advantage of the opportunities they were given. MIT seeks people who can create opportunities for themselves and who consistently exceed expectations.

Just as MIT does not accept students deemed to be academically unprepared, unqualified faculty members are not given positions at MIT. Successful faculty search processes entail inviting qualified applicants to seek positions at MIT. Sometimes those invited are women and minorities; sometimes they are not. Faculty members are hired based on an overall positive fit with MIT and the research group they would join.

That's not to say that these processes — especially undergraduate admissions — are perfect. Paper applications can struggle to tease out the human element. But we do think that the holistic approach is a large step in the right direction. Pursuits outside of schoolwork are often much more indicative of students' ability to chase down opportunities and dedicate themselves to a passion.

Affirmative action is crucial to maintaining the integrity of our meritocracy. The holistic admissions process at MIT takes into account the whole student, including upbringing and obstacles to success. If we do not recognize that different people have been given different opportunities, we will be tempted to judge people based on absolute measures of success — SAT scores, grades, and number of extracurriculars. Instead, we should be normalizing people's achievements based on the resources they had.

The 2010 Report on the Initiative for Faculty Race and Diversity articulates this well, saying, "While almost everyone at MIT would like the Institute to be an institution of merit and inclusion, it will be difficult to reach this ideal if race and ethnicity are ignored and presumed irrelevant." The report is repeating the teachings of social scientists: "color-blindness" is not the answer, and we cannot pretend that race doesn't impact how people are treated. Color-blindness only serves to further benefit those at the apex of our society while abandoning those who have worked diligently to overcome their circumstances but are still marginalized due to their race, gender, or socioeconomic class. MIT doesn't accept the average rich student, the average poor student, the average male, female, white, or black student. This community is built from the stand-out students and researchers from different segments of society that bring with them myriad experiences and knowledge.

When we take the time to think about what affirmative action really is — considering applicants' backgrounds and opportunities when judging their merits — we quickly realize how crucial it is to the success of any meritocracy. We hope that MIT will continue to take a holistic approach to admissions and faculty searches so that we can continue to change the world by giving opportunities to bright, hard-working minds regardless of their circumstances.

EMILY KELLISON-LINN—THE TECH

MIT has in the past recognized not only the importance of merit but also the significance of race and background.

How should students best respond

Students need to be more self-reliant

By Florence Gallez
STAFF COLUMNIST

While the series of student suicides at MIT and other colleges in the Boston area is not the focus of this piece, it has inspired my reflection on how to cope in difficult times at the Institute. These events have prompted me to stretch my search for solutions to perhaps controversial lengths. In any case, I wish to express my condolences to these students' families and loved ones.

Echoes of these tragic events have caused me to question our "community phenomenon," one that is consistently promoted not only at the Institute, but throughout the world.

Indeed, following such events, MIT and similarly affected colleges have quite logically launched into heartfelt introspection and debates. Typically, this desperate search for answers has been accompanied by an ever more strident call to "reach out" to those "appearing distressed," and to "seek help" from Student Support Services (S^3, MIT mental health services, or anyone else).

In the same vein, another common response has been to provide more information about the above-mentioned resources. The recently launched website "MIT Together" does just that, while encouraging students to seek support. Both student associations and the administration have identified a lingering stigma associated with asking for help. Thus, given the demand, those well-meaning efforts not only make sense, they are even a moral imperative.

However, we may need to question this pre-determined notion that there is strength in numbers, and to consider — for a change — a more individualistic approach than what has been so far presented as the sole solution by MIT's staff and students. The "community" approach has not worked for everyone.

There seems to be a growing urge for students and anyone feeling under pressure at MIT to rely on external sources of strength and practical help. We may want to ask ourselves if this inhibits our own strength and resourcefulness.

MIT's S^3, staff are very competent. Furthermore, one may be surrounded by trusted and well-meaning friends or blessed by a supportive family, both groups ready to lend an ear or hand in times of trouble. But the bottom line is that no one is going to brush your teeth for you. Just like all those momentous moments in life — birth, death, your wedding vows, college exams, and job interviews — no one can replace you and do the actual job for you. If one approaches MIT and problem solving this way, it goes a long way towards making one more resilient and less prone to having expectations and frustrations about help that doesn't come or is inadequate.

We must take it upon ourselves to expect and prepare for the stress, loneliness, sleepless nights and other bumps on the road, and we will be much better at handling them when they occur.

But more practically speaking, there also seem to be some holes in the "share your pain and seek help" strategy.

The "talk to a trusted friend" tip has been promoted so much by the entire counseling industry that it has nearly acquired mystical status. Yet, even the most well-meaning and dependable people in your life may not be around precisely at the time you need them.

But the question is, does talking always lead to appropriate action? Why not save precious time spent trying to locate possible sources of help and start the introspective thinking and problem-solving on your own? If this actually takes longer — how can sharpening your thinking skills be a bad thing?

I also suspect that talking and sharing may make you temporarily *feel* better, but what does it achieve concretely? In other words, talk therapy, whether in a professional or informal "with a friend" setting, is often a short-term, superficial solution.

There often are several perspectives and solutions to a problem. Thus, the benefit of seeking outside opinions is obvious. But if one listens to everything that has been said about most common problems by experts, self-help gurus, college counselors, practicing psychologists, and agony aunts, one finds that at some point the things being said start to repeat themselves.

I wonder what has happened to self-reliance and trust in one's personal coping abilities in a world that cannot get enough sharing and connecting.

Wouldn't a little self-reliance and quiet introspection go a long way towards helping us understand the roots of our problems? Each person and problem and its surrounding context is not unique, but we are also the ones living with these problems, day in day out, who know all our history of ups and downs. In other words, given our first-hand experience, the "expert" in our specific problems is ourselves — not others with diplomas.

It is difficult to achieve this kind of heightened awareness — being attuned to our emotions and intimately knowing our coping responses — if we are busy listening to the din outside with constant expectations of external help.

While I believe that developing a self-reliant approach works well, I also believe in the virtue of balance. More or less equal doses of self-reliance and smartly selected sources of support can be a winning combination.

However, I sense that there is an exaggerated focus on "the community," with implicit, but growing obligations to share and collaborate on personal issues and what used to lie squarely in the realm of the private. This in turn builds up our expectations for "the community" to "always be there for us" and respond appropriately.

An equal, reciprocal partnership is certainly to be praised. But the current emphasis on looking to others instead of introspectively, and relying on external factors instead of first actively seeking to solve problems ourselves creates an imbalance between the *yin* and *yang* of survival strategies. The risk of such a community-centered society is that individual needs and preferences may get brushed under the carpet for the common good.

The Institute's administration and professional support services have already demonstrated that they can do a wonderful job of taking care of the MIT community. Perhaps what is missing, given the current debate, is making sure that everyone is thriving. A healthy and effective community starts with the individual. Nurture the latter, then think of the group.

to the emotional stresses of MIT?

Asking for help is not a sign of weakness

By Ryan Normandin
STAFF COLUMNIST

Florence Gallez calls on victims of mental illness to try something we already know doesn't work, and is often dangerous to the individual: to tough it out, build up resilience, and get better on their own. Not only does this view run counter to virtually all research we have at our disposal today, but it is akin to asking victims with cancer to just try really hard to overcome it by themselves without seeking medical attention. Your body is just as incapable of getting rid of an illness like cancer as your mind is incapable of getting rid of an illness like depression. In fact, your body may even stand a better chance, as there's no "immune system of the mind." Gallez claims that we have everything we need inside of us, and by focusing on our needs and shutting out the noise of the world, we'll get better. Gallez is wrong. Let's take a look at what science has established with respect to mental illness.

First, if you have a mental disorder, you are not responsible for it. It does not make you weak, and you are in no way to blame for your disorder. Furthermore, refusing to seek help doesn't make you strong, tough, or more self-reliant; it makes you stubborn and will likely cause you to become sicker. The stigma surrounding mental illness is largely an artifact of a bygone era, when mental disorders were believed to be caused by sins, weakness, or demons. Of course, we no longer live in such an age, yet some are slow to catch up. Science tells us that mental disorders are, in fact, physical, just like other maladies. The only difference is that mental disorders affect the brain. Depression, for example, can be caused by a simple chemical imbalance. And to use depression as an example, even if you escape a bout of depression without seeking help, the odds of recurrence are much higher than if you do seek help. Why go through it over and over again when you could just go to the doctor the first time?

Second, if you have a mental disorder, you are not alone. Sure, you've probably heard this before, but this is not just talk meant to be encouraging. Over the course of their lives, over half (57.4 percent) of all Americans will struggle with a mental disorder. It is more likely that you will suffer from such a disorder at some point than not. Even if you're lucky enough to avoid affliction, someone you know may not be. And when the time comes that you, your spouse, child, or close friend is plagued by mental illness, should you tell them that self-reliance is the key? Should you tell them that if they just push through it, they'll come out stronger? If you do, you'll only be condemning them to worsening health.

Gallez talks a bit about practical tips that helped her, but she also has a different tolerance level for stress than everyone else here. Just like some people never get sick because their bodies are naturally better at coping with bacteria and viruses, others never get stressed because they are able to cope with higher levels of stress. More often than not, it is because these people have already sought help, not because they are somehow "stronger" than you. Whether you find yourself struggling with stress, depression, or something worse, seek help. At the very least, you might learn some helpful ways of coping with stress from a medical professional, and in some cases, you can prevent an even greater problem from seriously damaging your life. It also bears mentioning that the success rates of treating mental disorders are generally high. If you want to get better, seeking help is the way to go.

But where should you reach out if you or a friend needs help? MIT provides high-quality mental health resources. One that is utilized by about half of all MIT students during their time at the Institute is Student Support Services, popularly referred to as "S Cubed." It's located in Building 5, Room 104. As their website puts it, "whether you are having trouble with academic work for personal or medical reasons, you are considering taking time away from the Institute, or you just don't know who to talk to, we can help." They have walk-in hours from 9 a.m. to 10 a.m., and you can schedule an appointment between 9 a.m. and 5 p.m. on weekdays. However, if you suspect that you are struggling with a mental disorder, then seek help at MIT Mental Health and Counseling, located on the third floor of E23 (MIT Medical). Again according to the website: "MIT Mental Health and Counseling Service provides individual counseling and psychotherapy, group counseling, evaluations, consultations, and neuropsychology consults. Their staff consists of psychologists, psychiatrists, social workers, and nurses." Their walk-in hours are from 2 to 4 p.m. on weekdays, and of course you can always schedule an appointment for another time. Peer Ears and Peer2Peer are two other new groups, run by students, which you can reach out to if you just need someone to listen.

MIT is difficult — no one is denying that. The recent spate of suicides along with Lydia K.'s recent blog post titled "Meltdown" have made two things abundantly clear: people are struggling and, more than that, people aren't seeking help. The stigma surrounding mental disorders is unfounded, and we need to work as a community to beat it back. The way to do that is not to encourage people to isolate themselves and look within for strength because when they don't find it, they're going to think they're weak. And no one finds it, not because they're weak, but rather because it has nothing to do with strength. Mental illnesses are diseases that require medical treatment, whether that is behavioral or cognitive therapy, or medication. In some ways, mental health is like the issue of climate change in America; all the time and money we're wasting as a country debating whether or not it's happening could be put towards finding a solution. Similarly, the sooner we can eliminate the stigma and the blatantly incorrect, unfounded claim that self-reliance is all that is necessary, the sooner we can find better ways to help our community.

Rethinking MITx

Implementing MITx will detract from the value of an MIT education

By Rachel Bandler
STAFF COLUMNIST

This past December MIT announced the launch of "MITx," a new online learning initiative that will offer a large selection of MIT courses online and will allow those that demonstrate mastery of course material to earn a certificate of completion. The announcement has received much praise from both faculty and students as a mark of progress and a major step towards global education — but has the MIT community really considered the full impact of MITx?

The stated goal of MITx is to "create an open learning infrastructure" where MIT course materials will be available online so that "anyone in the world with the motivation and ability to engage MIT coursework [will] have the opportunity to attain the best MIT-based educational experience that Internet technology enables."

Online technology is constantly improving. If MIT were to truly work towards this end goal, at some point all of the MIT curricula would be posted online for open access — and eventually, online learning would rival classroom learning. What then, is the purpose of having a residential MIT campus or university — why not just make MIT an online school, and drop the $50,000+ price tag?

MITx will downplay the importance of an on-campus MIT experience and will make people think that they can get an MIT education from their bedrooms. It is true that some MIT students take eight courses a semester, never go to lecture, and complete all of their work without stepping foot in a classroom; however, that is not the typical MIT experience. A large part of the MIT learning experience is the interaction with professors and TAs, struggling over p-set problems with friends, collaboration, and face-to-face communication. If MITx offers MIT students a comprehensive and robust alternative to lectures and recitation, then the incentive for students to go to class will essentially disappear, and this will have a drastic influence not only on campus culture but also on what it means to receive an MIT education.

MITx will downplay the importance of an on-campus MIT experience.

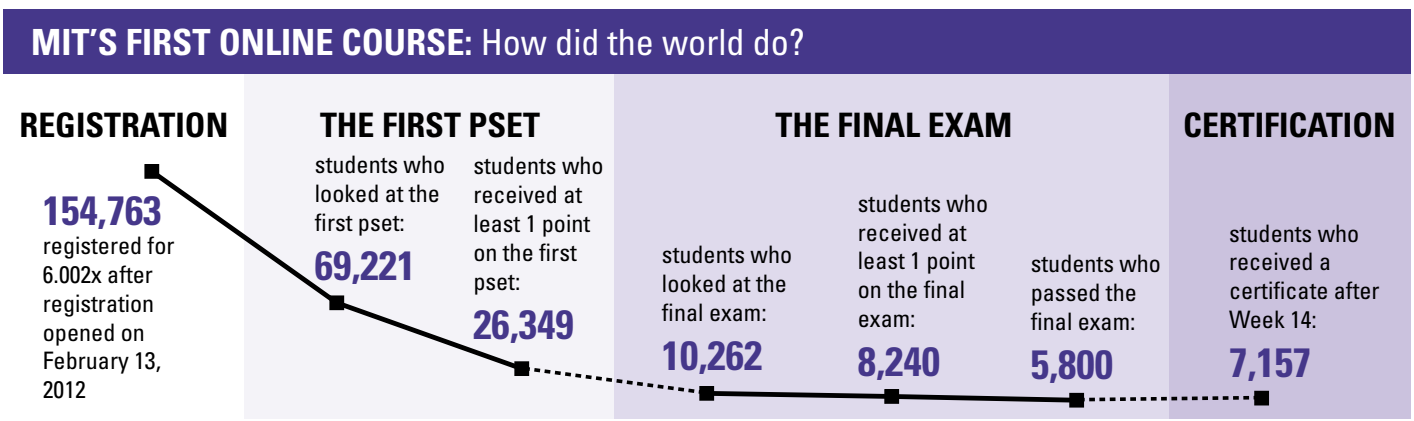
President Susan J. Hockfield said "on our residential campus, the heart of MIT, students and faculty are already integrating on-campus and online learning, but the MITx initiative will greatly accelerate that effort." But in reality what OpenCourseWare (OCW) and other online resources have already accomplished is providing MIT students with a way to sleep through lecture and watch them later — imagine what will happen when MITx is instituted and the online materials are far more comprehensive. There will be a large change in campus climate where MITx will diminish the importance of classroom learning and personal interaction.

Furthermore, instituting a program like MITx detracts from the value of an MIT education. Students at MIT pay tens of thousands of dollars per year to attend the Institute; the thought of the mass public being given for free what we have had to pay for so steeply seems unfair. The point is not that educating the world and spreading information is a bad thing — it is not. However, it is unjust when certain students have to pay extremely high tuition for materials that are being distributed to others online for free — material that ultimately does lessen the competitive advantage of MIT students in the workforce.

That is not to say that a MITx certificate is going to instantaneously eclipse or equate with a real MIT degree. But in the long run, as the online MITx materials improve, the MITx certificate may come to gain more respect among employers. Some may argue that the MIT degree will always be superior to a MITx certificate because MIT teaches problem solving skills that surpass what can be transmitted online. But the bottom line is that students will get jobs because they have MIT diplomas; it will not matter if they passed their exams from lectures vs. OCW material. Therefore, if the MITx certificates gain enough reputability then they can compete with the MIT diploma. Until MIT tuition is lowered, or some definite limitations are placed on what course material will be posted online, MITx is unfair and detrimental to every enrolled student enrolled at MIT.

Instead of launching an enormous and work-intensive MITx initiative, the MIT administration should dedicate their limited resources and time to bettering the actual MIT community. There are many students on campus who are struggling with their coursework, feeling the stress of the "pressure-cooker" that is MIT. The administration must stop jeopardizing the classroom and campus experience of its own students to enhance the resumes of the public.

INFOGRAPHIC BY KATH XU AND CONNOR KIRSCHBAUM—THE TECH



AKIMITSU HOGGE—THE TECH

CAMPUS LIFE IN REVIEW

In 2012, Campus Life saw foreign students documenting their experiences in the uniquely bizarre world of MIT, insightful stories by graduate students showing us that contrary to what we've all learned from PhD Comics, graduate school may not actually be an endless cycle of despair, and some generally great advice from your fellow students.

Looking back, we'd like to bring forward some of these golden tips again so that we all survive another year without suffering from malnutrition on a student's budget and maybe, just this once, actually fulfill our New Year's resolutions of getting in shape. Who knows, some of us might even be inspired to give grad school a shot! Crazier things have happened.

—Kali Xu
Associate Campus Life Editor

OUTSIDE THE MIT BUBBLE

Carrots, characters and cheeses

Haymarket provides a variety of foods for a student's budget

By Fabiola Michel

An Italian friend who has lived in Boston for five years, and is a cooker and a baker from the bottom of her heart, was the one to introduce me to Haymarket. She told me stories about the variety of produce, and above all, how cheap it can be, though the value depends on some variables, e.g., the fruit is not the freshest. The market, which originated in 1742, is open every Friday and Saturday from 7 a.m. to 6 p.m. and is right outside the Haymarket Station on the Orange and Green Lines — very close to Faneuil Hall and across the street from the North End area.

As my friend recommended, I first went to Haymarket on a Saturday evening because it is supposed to be the best time to bargain and have the best deal, given that the vendors just want to get rid of everything and leave. Indeed, I had a great time shopping! For $10 I got: two bags of spinach, one pound of tomatoes, two pounds of bananas, two pounds of carrots, one big eggplant, a bunch of asparagus, a box of strawberries, three zucchinis, four kiwis, three apples, and a large baguette — perfect for a student's budget! Everything was ripe and ready to be devoured. For a little fresher produce it's a little more expensive, maybe $12 or $13 for the same load of food.

If you were wondering, the reason for the good prices is very simple: the vendors typically buy their goods from wholesale markets in Chelsea across the Charles River on Thursday and Friday nights. They pay very low prices because the wholesalers need to clear out to make way for new arrivals during the weekend. So the Haymarket produce is what the wholesalers didn't sell during the week to the city's supermarkets.

I have been biking there ever since that first time and I love it! I am not the regular who appears every weekend choosing potatoes, but I take the adventure every two or three weeks. Instead of going at night, I go early in the morning so I can choose between the avocado I need three days later and the one ready for dinner today. Every time I go, I have tons of fun discovering tubers I never saw before, listening to the vendors yelling in different languages, telling the fisherman how thick I want the salmon fillet, or trying to bargain with a man while his children distract me by playing around with a fantastic handcrafted doll.

If you feel more adventurous in the kitchen, you can find fresh fish booths around the corner on Hanover Street. Once, I bought a little octopus and cooked it "A la gallega," i.e., boiled in very salty water and then chopped and sprinkled with olive oil, sea salt, and paprika. Delicious! Moreover, there are two meat markets and a grocery downstairs from the "Garden Halal" Lebanese restaurant, that I enjoy so much because they are always alive with a diverse crowd from Chinese young ladies, Russian old ladies, and Greek people buying spices, oriental teas, jasmine rice, poultry, or goat. There is also a little cheese shop where I found fresh cream cheese and feta at very good prices.

I went to Haymarket last Friday at noon and it was amazing. Now that the days are sunnier, trips are much nicer. Spring is evident in the new flower booth, or in the good mangoes for $7 a box! But the best of the best was a tanned Bostonian fisherman, standing behind his little icy booth, singing '70s reggae out loud, and selling the freshest oysters and clams — four for five dollars — just opened and sprinkled with lemon and hot sauce. That was heaven!

Now, important things to know before planning an expedition to Haymarket are:

1. Buy just what you are going to eat in less than a week. Nothing survives more than five days in the fridge unless you freeze it.

2. Only cash is accepted. If you go to the fruit and veggie booths, go prepared with $1 bills and quarters. In the meat markets, they do take credit cards.

3. For better quality and flavor try to shop for seasonal and regional produce.

4. It is not a farmers or an organic market. It is the same fruit as in the supermarkets, but cheaper.

5. Shop early for better quality, shop at sunset for very cheap food that isn't as fresh.

6. You could go at noon and have lunch at Haymarket Pizzeria, in the middle of the market where a mega slice is sold for $2.

7. Be aware of the old ladies with carts. They are almighty! And if one of them cuts the line as if there is none … you better say nothing!

Choosing my vegetables while talking with the same old lady every time, having a huge variety of products, and being so close and accessible makes the whole market experience very enjoyable. It makes me feel as if I was in my home country of Mexico!

FABIOLA MICHEL—THE TECH

THE SECRET LIFE OF RESEARCHERS

One fish, two fish, fake fish

Computer models of marine communications tease out ecosystem management trade-offs

By Emily Moberg

I like to joke that I study imaginary fish. People often remember that or, even better, ask what it means. Then, I get to tell them that I study theoretical ecology; I use mathematical tools to investigate how organisms interact with each other and with their environment. I am studying in the MIT Joint Program with the Woods Hole Oceanographic Institution, so my organisms of interest tend to be marine, but the only places they swim are in my computer, in equations, and, always, in my heart.

> **The only places the fish swim are in my computer, in equations, and, always, in my heart.**

Right now, I am interested in how metacommunities — imagine groups of coral reef communities that can share larvae, for example — are impacted by fishing. I am especially intrigued by how species interactions change the way the ecological community responds to fishing. Species interactions include predation, or the symbiosis of anemones and clownfish, or parasitism; they might seem obviously important to study, but we don't know much about how these underlying processes influence human interactions with these systems. Biological systems and their component organisms can do many complicated things — from evolving, to having babies, to expressing phenotypes dependent on their environment, to reacting to their environment. And yet, many of our models for fisheries are for only one species.

Unfortunately, those complicating factors like species interactions and community response to fishing are really hard to measure. That's what attracted me to biology from engineering in the first place — it's weird, it's complicated, it's fascinating. Some corals undergo reverse metamorphosis — that's the equivalent of a butterfly turning back into a caterpillar. Some organisms feed by spitting out huge mucus nets, catching things, and reeling them back in. Microbes can work together to make food. I find it mind-bogglingly, awesomely interesting. All this complication is compounded by the fact that the ocean is even harder to study than land; as a John Shepherd quote I have hanging in my office summarizes, "Counting fish is like counting trees except you can't see them and they move."

Figuring out how strongly fish interact and whether or not that is what influences how they respond to fishing is almost impossible, which is where modeling comes in. We can test all sorts of simple rules and scenarios — extreme scenarios that are physically impossible or "realistic" scenarios that might seem closer to what we think happens — and see how the system behaves. We can use these results to help tease apart the otherwise hopelessly complicated mess that is how and why nature does what it does.

So I swoop in, cloaked in my superhero cape, ready to rescue the situation with math. Right now, I have a biological model — which dictates how the fish colonize new habitats and interact with each other — coupled with an economic model which describes how fishing will proceed. My biological model is a patch occupancy model, which means that I use ordinary differential equations to track which species are present in an individual patch of habitat; how the populations change is how I incorporate the ecologically relevant characteristics of the system. The economic model prescribes how much each fish is worth and allows me to ask questions about the profit arising from the system. Then, I can dive into the heart of the matter and figure out how the ecological properties, like diversity, influence profit.

> **So I swoop in, cloaked in my superhero cape, ready to rescue the situation with math.**

One thing I found surprising is that under some types of community organization, such as when strong competition is present and colonization rates are low, there isn't a huge tradeoff; you make more money when there are more fish present so the habitat will be optimally managed to yield more diversity. In other circumstances, such as when the colonization rates are high and fish engage in a mutual relationship, there is a stark trade-off. I am excited to bring a spatial element into my model, which will help us understand how the arrangement of communities and fishing patterns in space influences both the community of fish and fishermen.

COURTESY OF UXBONA

JOSEPH MAURER—THE TECH

FROM CAMBRIDGE TO CAMBRIDGE

Generalist vs. Specialist

Beyond lectures, Cambridge and MIT differ in educational structures

By Mark A. Salmon
STAFF WRITER

The increasingly globalized workforce means that large multinational companies recruit graduates from all over the world. Given that various countries have their own university systems, there will certainly be differences in how students are prepared to meet the challenges of employment. I'm in the fortunate position of having studied in two countries — my first two years of college were spent at Cambridge in the U.K., and I am now at MIT through the Cambridge-MIT Exchange for junior year. My firsthand experience of how both universities teach has shown surprising contrasts.

In the U.K., degree programs are usually much more subject specific than their American counterparts. Prospective students apply to a particular course at a particular university while still in high school, and often choose their A-Levels (the last set of examinations, which takes up the last two years to study for) to align with this. As a consequence, the decision as to what to study and which career to take is largely made at the age of 16.

This lies in stark contrast to the U.S. system of arriving at college without having declared a major and being given the opportunity to take any class within the wide scope afforded by the university requirements. It is widely acknowledged that the typical American university graduate is very well-rounded, with a base of knowledge in a wide variety of fields and greater ability in subjects closer to his major.

U.K. graduates are much more focused on a smaller range of material, leading to a narrower breadth of capabilities but a higher level of competence in the chosen field. By way of evidence, students in the CME program take a number of graduate courses to ensure good compatibility with what we are missing back home despite only being juniors, but would seriously struggle in some of the freshmen GIR classes in subjects outside our major.

Interestingly, both MIT and Cambridge lean away from their native country's conventions. MIT, thanks to its strong technology bias, creates individuals very strong in science. Cambridge, at least in the science and engineering faculties, is one of the few U.K. establishments that doesn't require specialization at point of entry. Engineers follow a set general engineering degree for two years. Scientists are required to study a wide range of topics before splitting into chemistry, biology, etc. Perhaps the optimal solution is a middle ground between the methodologies on either side of the Atlantic, with the top two universities in the world approaching this from different angles.

Despite similar overall strategies, I have found that the teaching styles of the two universities are relatively disparate. Beyond lectures, MIT has a strong propensity for labs and practical work, promoting a very "hands-on" approach in line with the Mens et Manus motto. It is clear to any outsider that the Institute puts its considerable income to good use here with no shortage of lab space or equipment.

On the other hand, Cambridge labs, certainly undergraduate ones, are of significantly lower priority. For the first two years of the engineering course, for example, the labs are demonstrations of theory learned in lectures. Full credit is awarded simply for showing up and occasionally writing a cursory lab report. In later years, the labs develop into more extensive and graded projects, but the courses are biased towards theory.

In place of recitations, Cambridge uses supervisions, where students go through problems with academic material at a typical ratio of two to one. This intensive procedure is an invaluable resource students really come to appreciate — though there is nowhere to hide in the event of not having done the work — and allows a thorough understanding to be developed in a short time. Which is perhaps just as well, given that Cambridge runs three eight-week terms a year, compared to MIT's two 14-week semesters.

The final, and perhaps greatest, difference lies in the grading system. MIT's continual assessment through problem sets, projects, midterms, and finals is very in-depth, with the advantage of spreading pressure over a longer period. In Cambridge, an entire year's work hinges on the one or two weeks in June when exams take place. During the final term of the year, there is a tangible difference in the atmosphere between the weeks of serious revision before exams and the glorious celebration of excess the week after. This time is known as May Week, and has the world renowned May Balls.

Both methods divide opinions; some feel the continual assessment leads to students cramming the night before quizzes without learning long term, while others think that finals alone do not factor in practical skills and impose unrealistic amounts of pressure on students. Nevertheless, both are tough tests of a student's ability.

MIT and Cambridge both provide brilliant levels of education for those willing to seize the opportunity and put in hard work. The students who persevere are the ones that companies will be looking for, regardless of where they studied.

SPORTS IN REVIEW

2012 was a remarkable year for MIT sports. An unprecedented number of teams won NEWMAC titles, and many student-athletes demonstrated that it is possible to excel at both academics and sports at MIT by earning Academic All-American and All-Conference awards.

Outside of MIT, 2012 was the year of the 30th Olympic games held in London, and the year that Lionel Messi broke the record for the most soccer goals in a calendar year with 91 total goals. It was also the year that the San Francisco Giants topped the Detroit Tigers in the World Series, the Los Angeles Kings beat the New Jersey Devils in the Stanley Cup, and LeBron James and the Miami Heat beat the Oklahoma City Thunder in the NBA finals. In football, we saw another matchup between the New England Patriots and the New York Giants in which the Patriots lost, and we had to endure a halftime show featuring Madonna.

In the following pages, *The Tech* recaps the year for MIT sports and some of the most memorable moments from the Olympic games.

—Sarah Weir
Sports Editor

JESSICA LIU—THE TECH

A look back at a year of MIT sports

Engineers had a successful year in 2012, won many competitions

By Carlos Greaves
SPORTS WRITER

Whenever I go back home over a break and I mention that I write for the sports section of *The Tech*, people always ask me questions like, "Does MIT have any good athletes?" and "Do the teams ever win games?"

It seems as though people refuse to believe that any individual can excel in both physical and mental feats. In a country where highly intelligent people are reduced to super-nerds in *The Big Bang Theory*, and athletes are reduced to *Arrested Development*'s hilariously dumb "Steve Holt!" it's no wonder people assume that those who are highly talented at one thing must be completely devoid of other abilities. Thus, it is unfathomable that anyone at a "nerd school" like MIT would be able to succeed at anything other than rocket science or brain surgery.

Well, I hate to disappoint all the non-believers, but MIT does have good athletes. In fact, we have some of the best athletes in the country. In 2012 alone, we saw the men's basketball team make an appearance in the NCAA Division III final four, the football team upset the team with the longest winning streak in Division III, sent a swimmer to the U.S. Olympic trials, and very nearly sent two weightlifters to the 2012 Olympics. That's just a few of the many athletic accomplishments of MIT students in 2012. So much for a "nerd school!"

The year got off to a great start when the men's basketball team, led by center Noel Hollingsworth '12, and point guard Mitchell H. Kates '13, lost only two games during the regular season (one of them was an early season tune-up against Harvard). They then won the NEWMAC championship for the third time in four years, and qualified for the NCAA Division III tournament for the fourth year in a row. The team handily won their first four games in the tournament and advanced all the way to the final four before falling to the University of Wisconsin-Whitewater.

> **It seems as though people refuse to believe that any individual can excel in both physical and mental feats.**

Many other varsity teams competed well, especially at the conference level. Both the men and women's tennis teams won NEWMAC championships, and women's team players Lauren C. Quisenberry '14 and Vynnie J. Kong '15 were ranked 13th and 25th in the northeast region, respectively. Both the men and women's track and field teams won NEWMAC championships, and the women's team also won the New England Division III championship.

The MIT men and women's swimming and diving teams each won NEWMAC titles, and the men's team placed 4th overall the NCAA Division III tournament while the women placed 8th overall. As mentioned earlier, men's swimmer Wyatt L. Ubellacker '13, an All-American and Academic All-American, became the first swimmer in MIT history to qualify for the Olympic trials, barely missing the cut for the semi-finals of the 50-meter freestyle, and placing 21st out of 167 competitors.

The women's volleyball team also won a NEWMAC championship (noticing a trend here?), as did the women's field hockey team who captured their third title in four years. Particularly noteworthy for the women's field hockey team was the career of senior Molly E. McShane '13, who was voted the New England East Region Player of the Year for the second year in a row, and who became the first field hockey player in MIT history to receive All-American accolades all four years. To top it off she's also an Academic All-American.

The men's cross country team won the NEWMAC championship for the 15th (yes, you read that right) year in a row, which is every year since the conference was formed in 1998. The women's cross country team also won a NEWMAC title, then went on to win the New England Division III championship, and placed 6th overall in the National

JAN 2012

MIT Men's Basketball

Men's Basketball makes it to NCAA Division III Final Four after a historic season for the program with a record of 29-2.

MAR 2012

FEB 2012

New York Giants Upset New England Patriots in Super Bowl XLVI

Eli Manning and the New York Giants upset the Patriots in the Super Bowl, 21-17. Manning led the Giants on an 88-yard game winning drive, with RB Ahmad Bradshaw scoring what ended up being the game-winning touchdown with 57 seconds remaining. The Giants previous Super Bowl win came in 2007, also against the Patriots.

MIT Swimming and Diving

Swimming and Diving finishes another successful season, with the women's team placing eighth at NCAA Division III Championships and the men's team finishing in fourth place overall.

MAR 2012

MAR/MAY 2012

MIT Men's and Women's Track and Field

Men's and Women's Track and Field earn NEWMAC titles after an impressive season. The women's team sends athletes to NCAA Division III Indoor and Outdoor championships; at the outdoor competition, Jamie Simmons '12 misses the national title in the 400-meter hurdles by 0.09 seconds.

LeBron James Wins First NBA

In one of the most exciting NBA Finals in recent memory, the Miami Heat overtook the Oklahoma City Thunder in 5 games to win their first NBA Championship since 2006. LeBron James

Championship.

The men's soccer team won the NEWMAC title, while the women's soccer team advanced to the third round of the NCAA Division III tournament before losing to the team that eventually won the National Championship.

In addition to the domination of our varsity sports, several club teams had exceptional performances in 2012.

The MIT men's hockey team won their second Northeast Collegiate Hockey Association (NECHA) Cup in a row, the MIT Sport Taekwondo Club won the ECTC cup and placed second at nationals, and the MIT Cycling Club won the USA Cycling Collegiate Track Division II National Championship.

Arguably the most impressive feat of any MIT team sport in 2012 came when gymnasts Zara K. Karuman '13, Julia Sharpe '09, and Lindsay M. Sanneman '14 placed 1st, 2nd, and 6th, respectively, in the NAIGC all-around competition and vaulted (pun fully intended) the women's gymnastics club to their second national championship in a row, beating out huge state schools like Penn State and Texas A&M. It may not have been an NCAA title, but remind me again why this team lost its varsity status?

Along with MIT varsity and MIT club team accomplishments, there are athletes who compete outside of MIT who also deserve acknowledgement. The first two are Gwendolyn A. Sisto G and Michael A. Nackoul '13, both of whom are weightlifters who have represented team USA at World and Junior World competitions over the past few years. Both have their sights set on competing at the 2016 Olympic Games in Rio de Janeiro. Finally, I would like to acknowledge Colleen T. Rock '14, who has been a member of the US Women's National Sled Hockey Team for the past eight years.

Before you start to think that all this athletic success must come at the expense of academic success, you should know that MIT is the all-time Division III leader in producing Academic All-Americans (188), and is third across all of NCAA. This year, three members of the MIT football team, the squad that upset one of the top teams in Division III, proved that you don't have to choose between brains and brawn. Ethan E. Peterson '13, Russell A. Spivak '13, and Rhys D. Borchert '14 were all named Academic All-Americans, with GPAs of 4.8, 4.8, and 4.9, respectively. Those are just three of the many MIT students who earned Academic All-American accolades in 2012.

In addition to the domination of our varsity sports, several club teams had exceptional performances in 2012.

Many more MIT athletes are named Academic All-Conference, including 138 this past season, an achievement that requires a GPA above 4.35. Additionally, Kyle Hannon '13 and Lauren Kuntz '13, on the men's and women's track and field teams, were each awarded an NCAA Elite 89 Award, which is given to the student-athlete with the highest GPA at a particular national championship event. Lastly, the men's water polo team was recognized this year for having the highest average GPA in NCAA.

For a school its size that doesn't give out athletic scholarships, MIT is very successful in athletics across the board. While MIT may not compete at the highest level of competition in every sport, it also has a student body that is one-tenth the size of many Division I schools. That said, the ability for so many MIT athletes to excel within their competition brackets while coping with the unparalleled stress of academics at MIT, is a testament to their hard work and determination. It goes to show that it is entirely possible for individuals to succeed both in the classroom and on the field as long as they are prepared to put in the necessary effort. Who would've thought?

Before I step off of my soapbox, I would like to recognize the many other excellent student-athletes who I was not able to mention by name in this article, as well as the other varsity and club teams that accomplished great things in 2012. If I were to list all of the All-Americans, All-Conference, Players-of-the-week, and Academic All-Americans at MIT, as well as summarize all of the big wins for every varsity and club team in 2012, this article would probably take up the entire year in review. That said, if you know anyone who falls into one of these categories please congratulations them, and continue to show them the same support in this new year. And remember to tell them to email *The Tech* the next time they have a big moment so that we don't overlook them. Go Engineers and good luck to all MIT student-athletes in 2013!

JUN 2012

Olympic Trials

U.S. Olympic Trials athletes included senior swimmer Wyatt Ubellacker, who swam an impressive day, posting personal record times in the 50-meter freestyle and 100-meter freestyle events.

OCT 2012

San Francisco Giants Sweep Detroit Tigers to Win World Series

In Game 1 of the World Series, Giants 3B Pablo Sandoval hit 3 home runs, tying a Major League record for home runs in a playoff game. He was also named the series' Most Valuable Player. It also marked the first World Series in which the batting champion from both the American League (Miguel Cabrera) and National League (Buster Posey) played against each other.

NOV 2012

MIT Women's Field Hockey

Women's Field Hockey collects their third NEWMAC title in four years and earns a spot to compete in the NCAA Division III tournament.

DEC 2012

Championship

was named Finals MVP after winning his first title, averaging 28.6 points, 10.2 rebounds and 7.4 assists per game.

JUN 2012

MIT Men's Football

Men's Football overtakes previously undefeated Salve Regina University in the final 35 seconds of play, with a final score of 20-19.

OCT 2012

MIT Women's Soccer

Women's Soccer makes program history by advancing to the third round of the NCAA Division III tournament before falling to No. 1 ranked Messiah College.

NOV 2012

JESSICA L. WASS—THE TECH

1

AKIMITSU HOGGE—THE TECH

2

CHRISTOPHER A. MAYNOR—THE TECH

3

JESSICA LIU—THE TECH

5

XIAOYI REN

4

ELIJAH MENA—THE TECH

6

1. MIT swimmers compete in the 200-yard freestyle relay. **2.** Joseph M. Paggi '16 (left) and Priyanka M. Chatterjee '15 represent the A division sailing team in the Smith Cup. **3.** Benjamin D. Hessels '14 leaps over a defender in a lacrosse game against the Wentworth Institute of Technology. **4.** The MIT women's varsity lightweight crew team rows in a regatta co-hosted by MIT and Harvard-Radcliffe. **5.** Alexander C. Klein '15 serves for MIT against Harvard. **6.** Martha M. Gross '12 (second from left) places sixth in the 400-meter dash.

2012 summer Olympics highlights

46 gold, 29 silver, and 29 bronze medals win medal count for USA

By Sarah Weir
SPORTS EDITOR

I'm not sure where you were this summer, but from July 27 to August 12, I was glued to my computer/TV for any coverage of the Summer Olympics. In case you missed any important moments, I'll do my best to highlight some key events of the Games.

Opening ceremony

We all remember the Beijing Olympics and its extravagant opening ceremony. Countless performers created beautiful illusions in perfect sync, reminding us all of China's conformity. As such, the London ceremony was highly anticipated, especially since it was directed by Danny Boyle, who did *Slumdog Millionaire* and *Trainspotting*. The ceremony took us on a journey through British history, and met mixed reviews. I most enjoyed the "Happy and Glorious" segment that included James Bond and the Queen jumping from a helicopter and an appearance by the Queen's corgis.

The ceremony took us on a journey through British history, and met mixed reviews.

Cycling

Fittingly, Great Britain dominated the Olympic cycling events in London. Bradley Wiggins, who had just won the Tour de France, won the gold medal in the Men's Olympic Time Trial event. In the Velodrome, Great Britain won 9 medals, 7 of them gold. Chris Hoy earned two gold medals in the Team sprint and Keirin, which makes him the most decorated British Olympian ever. Kristin Armstrong from the United States defended her Olympic gold in the Women's Time Trial.

Swimming

It was another great year for the U.S. Olympic swim team. Katie Ledecky, the 15-year-old from Maryland, won the gold medal in the women's 800-meter freestyle to become the youngest U.S. gold medalist in London. 17-year-old Missy Franklin also shined at the Games, winning five medals (four of them gold) and breaking the world record in the 200-meter backstroke. Another hot topic was Ryan Lochte's attempt to dethrone the king-of-swimming Michael Phelps. Lochte started out with a huge upset in the 400 IM, but his lead was stripped as Phelps won four gold medals (100m butterfly, 200m IM, 4x200m freestyle relay, and 4x100m medley relay) and two silver medals (200m butterfly, 4x100m freestyle relay). Phelps became the most decorated Olympian of all time.

Track and Field

Usain Bolt shocked the world when he crushed his competitors in Beijing's 100-meter dash. He was the favorite coming into these games, and ended up winning both the 100-meter and 200-meter races for the second Olympics in a row. Jamaica swept the 200-meter race with Yohan Blake taking silver and Warren Weir earning the bronze.

Another highlight of the London Track and Field tournament was the performance of Great Britain's own Mo Farah. He won the gold medal in the 10,000-meter and 5000-meter races alongside his American training partner, Galen Rupp, who took the silver in the 5000. It was the first time that Great Britain had won a gold medal in the 10,000-meter race.

The United States women dominated the 200-meter, with Allyson Felix taking gold and Carmelita Jeter ending up with the bronze. Jeter also won the silver medal in the women's 100-meter final in between Jamaica's Shelly-Ann Fraser-Pryce in first and Veronica Campbell-Brown in third.

One of the most remarkable moments of the Games was when Oscar Pistorious, the South African sprint runner, became the first double leg amputee to compete in the Olympics. He won second place in the first heat of the 400-meters race, and finished eighth in his heat of the semifinals.

Soccer

Brazil was upset in the men's final when they lost 2-1 to Mexico. They had dominated the games up to the finals, racking up 15 total goals, but Brazil was overtaken as they attempted to win their first gold medal in the event. Mexico's Oribe Peralta scored in the 29th second of the game, which is the fastest goal in FIFA history. We can all expect Brazil to come back with a vengeance as they play at home in the FIFA World Cup in 2014.

We can all expect Brazil to come back with a vengeance as they play at home in the FIFA World Cup in 2014.

The United States won its third gold medal in a row, defeating Japan 2-1 in the women's final. This was Japan's first appearance in a final match. Carli Lloyd scored both goals for the U.S., and Yuki Ogimi scored once for Japan. This is the second time Lloyd has scored the winning goal for the U.S. Olympic team, the last time against Brazil in the 2008 Beijing Olympics.

Gymnastics

It's always stressful for me to watch gymnastics. For one thing, NBC does a lot of build-up on the athletes and the rivalry between the U.S., Russia, and China. After the routines are done, you sit there waiting for scores that can seem completely random. This year, the U.S. women's team won the Team event for the first time since 1996 and Gabby Douglas took the All-Around title. The Russian women's team was close behind with silver in the Team event and silver and bronze in the Individual All-Around. China won the men's Team event and Kohei Uchimura of Japan won the Individual All-Around title with his stunning technique.

Conclusion

The United States won the medal count with 104 total medals including 46 gold, 29 silver, and 29 bronze medals. China came in second with 88 total medals, and Great Britain third with 65. With the London Olympics at a close we can look forward to the 2014 winter games in Sochi, Russia and the next Summer Olympics in Rio de Janeiro in 2016.