

MIT mourns loss of students and professors

Kate R. Goldstein
Graduate Student



MATTHEW CAVANAUGH

See page 8

Seth J. Teller
Professor



COURTESY OF MIT NEWS OFFICE

See page 10

Update on causes of deaths:

Hadi Kasab p. 10
Eliana F. Hechter p. 10

Death notice:

Paul U. Uche p. 8

Obituaries:

Irwin Oppenheim p. 9
John G. King p. 8

Possible new gender options on MIT app

Currently just “female,” “male”

By Kath Xu
NEWS EDITOR

In an effort to be more inclusive, the undergraduate admissions office is considering adding to the gender options on its freshman application. Currently, the only choices available are “female” and “male.”

The office is considering adding a “trans*” option, as well as a blank box to allow applicants to type in their own gender identity. However, Abigail Francis, director of LGBT services at MIT, said that the additional gender identification options have not yet been finalized.

According to Dean of Admissions Stu Schmill ’86, changes will not be made in time for this year’s application cycle.

“What we have been currently talking about is how we can separate asking about gender identity from sexual orientation, and therefore how we might change the way we ask about gender,” Schmill wrote in an email to *The Tech*. “This is complicated by our system and reporting requirements, but we are exploring how we might best accomplish this in the future.”

Francis hopes that updating the gender question will “provide applicants with more ways to identify their gender beyond the traditional binary options of male and female.”

Samuel O. Brinton ’14, who identifies as a gender-fluid individual, said he was “very excited

Gender options, Page 10

Online directory to suppress addresses

Phone numbers no longer public

By Alexandra Delmore
STAFF REPORTER

By the start of the fall semester, MIT students’ permanent home addresses, term phone numbers, and term addresses will no longer be displayed in the online MIT people directory.

The Family Educational Rights and Privacy Act (FERPA) and the MIT Student Information Policy outline which pieces of personal information MIT can collect and display to the public. The directory previously included, when applicable, each student’s name, course, year, email address, MIT office address, MIT office phone number, permanent home address, term phone number, and term address. MIT students could submit a request for repression

to the registrar if they did not want certain pieces of this information displayed.

With the recent changes in effect, MIT still retains all personal information given by students, but the default is to now not to publicly display the latter three pieces.

“We’re just updating some of our information so that we can correctly inform students of this change,” said Mary Callahan, co-chair of the Committee on Student Information Policy, in an interview with *The Tech*. “The IT part is all set to go, so within a few weeks we can put the changes into effect.”

Personal information has been a part of the MIT directory “since the paper era,” said

MIT search, Page 9

Institute names interim math department head

MIT named Professor Tomasz S. Mrowka ’83 the interim head of the Department of Mathematics this June.

The position was recently vacated when MIT named his predecessor Michael Sipser as the dean of the School of Science.

Mrowka received his bachelor’s from MIT in 1983 and his PhD from UC Berkeley in 1988. He held teaching positions at Stanford, Caltech, and Harvard before returning to MIT in 1996.

He has chaired the department’s Graduate Student Committee and the Pure Mathematics Committee in the past.

For his research, Mrowka was named a fellow of the American Academy of Arts and Sciences in 2007, a Guggenheim fellow in 2010, and a fellow of the Radcliffe Institute for Advanced Studies in 2013.

—Shenghao Wang

Frosh picking Maseeh no longer locked in

15 may switch in and out during REX

By Katherine Nazemi

This fall, when freshmen are exploring dorms and living groups and taking part in Residence Exploration (REX) activities, they’ll have one more dorm to consider: Maseeh. Starting this September, Maseeh Hall will join the list of dorms that participate in First Year Residence Exchange (FYRE), allowing 15 freshmen to switch in and out at the end of REX.

The exact details of implementation — such as what will happen if fewer people want to move out than in — have yet to

be decided, but will ultimately either be identical to or closely resemble the current FYRE policy at fellow residence-based advising (RBA) dorm Next House, according to Maseeh Housemaster Jack Carroll.

Maseeh will also adopt Next House’s advising policy for maintaining residence-based advising with residence exchanges. The policy, as communicated to Maseeh students in an email from the housemasters, maintains that students will stay with whatever ad-

Maseeh, Page 9

IN SHORT

The waitlist for graduate student housing is now open! Any graduate student, postdoctoral associate, or visiting researcher without a graduate housing assignment is eligible to apply for the waitlist. Housing offers will be made to graduate students in mid-late August.

MIT certificates expire on July 31. If you are a continuing at the Institute you will need certificates to access MIT-secured resources. Visit <https://ca.mit.edu/ca/> to renew for the academic year.

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



DAVID DA HE—THE TECH

Boston’s Fourth of July fireworks as viewed from Cambridge. The show was rescheduled to July 3 due to weather conditions, and was immediately followed by a thunderstorm that sent spectators scurrying for shelter.

POLITICS 1, ECONOMICS 0

Our opinion editor on the professor who toppled Eric Cantor.
OPINION, p. 4

PAINLESS RENEWALS

Keep a library book for more than a year without lifting a finger. **NEWS, p. 8**

AROUND THE WORLD IN 42 DAYS

A rising sophomore and pilot wants to set a world record. **NEWS, p. 10**



TIPS ON SUPPORTING THE OVERWORKED GRAD STUDENT

May or may not involve UROPs ... and cats. **FUN, p. 6**

DRAMA OF THE 2014 WORLD CUP

Thoughts as we near the final stage of a surprise-filled tournament. **SPORTS, p. 12**

SECTIONS

World & Nation ... 2
Opinion ... 4
Fun Pages ... 5
Sports ... 11

Tanker hijackings add to tensions in South China Sea

By Keith Bradsher
THE NEW YORK TIMES

KUALA LUMPUR, Malaysia — Add another problem to the rising tensions in the South China Sea this year: a mysterious spate of tanker hijackings since late April, as armed bands of men have boarded and commandeered the ships, siphoned their cargos of diesel and gasoline onto barges or other tankers, and fled into the night.

One goal of the investigation is to determine whether the diesel fuel and gasoline are being sold for

But China has been increasingly assertive over the past several years in claiming that James Shoal lies inside its so-called nine-dash line, a huge expanse of the South China Sea that Beijing has been claiming with increasing boldness, particularly this year. A small flotilla of

In a typical year, one tanker, or even none, is hijacked in the South China Sea or the adjacent Strait of Malacca. Freighters and pleasure boats are sometimes stopped and their crews and passengers robbed and, on rare occasions, kidnapped. From \$1 million to \$2 million worth of fuel has been stolen from each of six tankers that have lost part or all of their cargos in the South China Sea since mid-April.

Obama to nominate new deputy secretary of energy

By David E. Sanger
THE NEW YORK TIMES

If confirmed by the Senate for the No. 2 job at the Department of Energy, which has been held for five years by Daniel Poneman, Sherwood-Randall would join the department at a moment when it is remaking the nation's nuclear weapons complex and figuring out the delicate politics of the boom in oil and gas fracking. She would oversee the nuclear complex and a multibillion dollar program to overhaul the nation's nuclear laboratories as well as its program to update a modestly-shrunken arsenal of nuclear weapons.

"She has been the White House

Sherwood-Randall grew up in California and graduated from Harvard College, where her roommate was a future member of Obama's Cabinet: Penny Pritzker, the secretary of commerce. During the Clinton administration she was deputy assistant secretary of defense for Russia, Ukraine and Eurasia, and a protégé of William Perry, former President Bill Clinton's defense secretary.

Pleasant weekend ahead

The hot and humid weather of the last several days will continue today, with a chance of thunderstorms today. Thunderstorms are a common summertime occurrence, but it is important to take the treat of severe weather carefully. On Monday afternoon, a mesocyclone passed just north of MIT, and had a tornado warning associated with it. Although no actual tornadoes were reported, there was a confirmed microburst (with straight line winds of

A cold frontal passage tonight will bring a reprieve from the heat and humidity. The weather will be sunny and pleasant tomorrow and through the weekend, with seasonable temperatures and drier air.

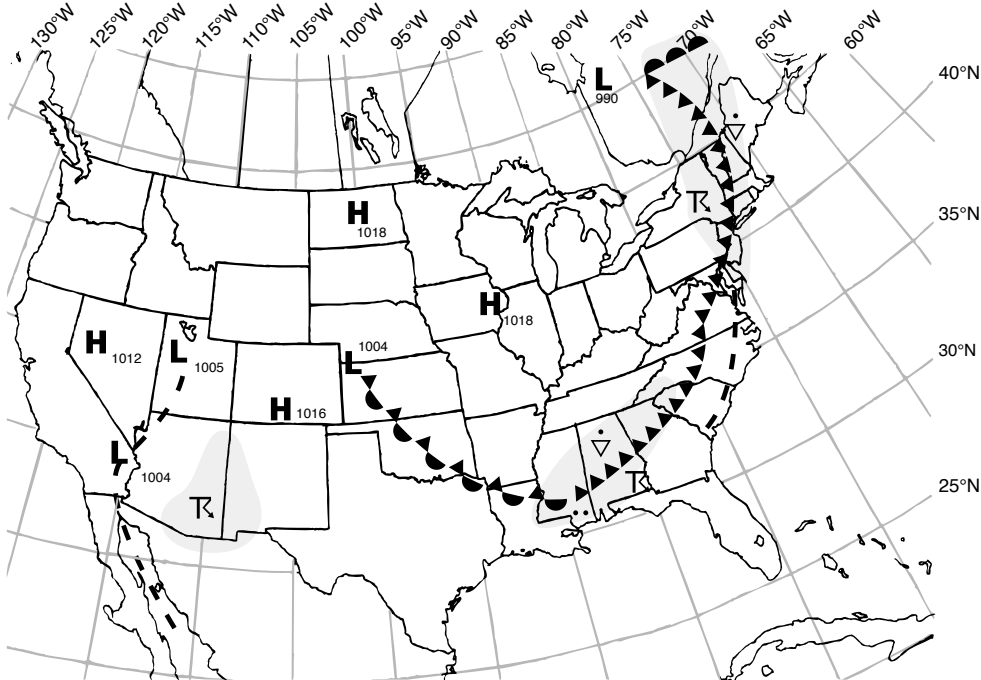
Today: Partly sunny, chance of showers and thunderstorms. High 92°F (33°C). Southwest winds at 10-15 mph.

Tonight: Mostly cloudy, chance of thunderstorms. Low 67°F (19°C). Southwest winds 5-10 mph.
















Tomorrow: Mostly sunny, slight chance of AM showers. High 83°F (28°C). Low 65°F (18°C). Southwest winds at 3-8 mph.

Friday: Mostly sunny. High 81°F (27°C). Low 63°F (17°C). East winds at 2-5 mph.

Saturday: Mostly sunny. High 81°F (27°C). Low 65°F (18°C). Southeast winds at 2-5 mph.



Situation for Noon Eastern Time, Wednesday, July 9, 2014

Weather Systems	Weather Fronts	Precipitation Symbols	Other Symbols
H High Pressure	 Trough	<div>Snow</div> <div>Rain</div>	<div> Fog</div>
L Low Pressure	 Warm Front	<div>   </div>	<div> Thunderstorm</div>
 Hurricane	 Cold Front	<div>    </div>	<div> Haze</div>
	 Stationary Front	<div>   </div>	<div>Compiled by MIT Meteorology Staff and <i>The Tech</i></div>

Holder urges Europeans to step up anti-terrorism tactics

By Matt Apuzzo
THE NEW YORK TIMES

WASHINGTON — Attorney General Eric H. Holder Jr. on Tuesday implored more European countries to adopt U.S.-style counterterrorism laws and tactics, including undercover stings to prevent potential terrorists from traveling to Syria.

Holder’s speech in Oslo, Norway, amounted to a full-throated endorsement of America’s pre-emptive counterterrorism strategy, which began in earnest under President George W. Bush. The FBI has created elaborate ruses to ensnare people who express interest in joining terrorist groups or attacking America. That has led to a number of high-profile cases but also criticism that the United States is manufacturing terrorism cases and entrapping Muslims.

Prosecutors have also arrested people before they boarded international flights, charging them with providing support to terrorist groups. Such laws do not exist in every country.

“In the face of a threat so grave, we

cannot afford to be passive,” Holder said in prepared remarks. “Rather, we need the benefit of investigative and prosecutorial tools that allow us to be pre-emptive in our approach to confronting this problem. If we wait for our nations’ citizens to travel to Syria or Iraq, to become radicalized, and to return home, it may be too late to adequately protect our national security.”

As Syria has descended into war, counterterrorism officials fear that Westerners will travel there to train and fight with terrorist groups. Because of flexible travel agreements between European countries and the United States, officials have long feared the threat of terrorists with Western passports.

The U.S. government estimates that there are more than 7,000 foreigners, including dozens of Americans, fighting in Syria. The Justice Department has offered to help other countries draft laws giving governments wider authority to prosecute people before they launch attacks.

In Norway in 2010, before the law changed there, U.S. investigators were frustrated by what they saw as

their foreign counterparts’ slow pace in disbanding a terrorist cell. Norwegian authorities worried they could not win convictions if they broke up the cell in the planning stages, although they ultimately did.

The undercover sting has become a common FBI tactic in domestic counterterrorism cases, and Holder said the government worked hard to make sure civil rights are protected.

Typically, the FBI intercepts an email that someone in the United States has sent to a terrorism suspect, or a tipster alerts authorities that he knows someone who wants to attack America. An undercover agent then steps in and offers to help in the attack. If the suspect says he wants to proceed, the FBI provides fake weapons, then makes an arrest.

Despite criticism, the tactic has been extremely successful. Courts have repeatedly rejected claims of entrapment. Federal authorities say stings catch dangerous people before they hurt anyone. Agents believe the operations also sow distrust by reminding people that the person offering to help plan an attack might be an FBI agent.

New leadership style in China complicates American diplomacy

By Jane Perlez
THE NEW YORK TIMES

BEIJING — As Secretary of State John Kerry and Treasury Secretary Jacob J. Lew, joined by a large group of U.S. officials, meet with senior Chinese leaders here this week, they will face an American-Chinese relationship riven by a strategic rivalry not seen before, a situation that neither side appears in the mood to improve.

Complicating matters is the one-man leadership style of President Xi Jinping, who appears to make the big decisions on national security — meant to challenge U.S. primacy in the Asia-Pacific region and establish a China-centric alternative — without much consultation with others, Chinese and U.S. experts say.

China’s push against two of America’s major allies, Japan and South Korea; its thrust into the South China Sea, which threatens freedom of navigation; and the

sudden imposition of an air defense zone near Japan all reflect Xi’s thinking about China’s rightful place in Asia, analysts say.

Both China and the United States have set low expectations for progress on the issues scheduled to be discussed at the annual Strategic and Economic Dialogue, intended as a venue for the two sides to hash out difficult topics.

The best prospect seems to be the effort toward a bilateral investment treaty that China agreed to start negotiations on last year.

Toward that end, China’s vice minister of finance, Zhu Guangyao, said Monday that talks would begin soon on lifting restrictions on foreign investments in both countries, such as cutting back on the national security reviews Washington conducts before approving big Chinese investments in the United States.

In one critical area — cyberespionage — there is unlikely to be any real discussion. After the Justice Department won the indictments of

five members of the Chinese People’s Liberation Army on charges of cybertheft in May, China suspended a working group that had held only two sessions.

The atmosphere between Beijing and Washington has deteriorated to such an extent since Xi and President Barack Obama met at the Sunnyslans estate in California a year ago that even pressuring a nuclear North Korea, the one area they agreed to pursue at that time, has almost vanished from the agenda, U.S. officials said.

Xi is making decisions based on his interpretation of “China’s national greatness and military effectiveness,” said Shi Yinhong, a professor of international relations at Renmin University of China in Beijing who has advised the government on occasion.

Xi’s sense that Obama is a lame-duck president propels his inclination to “push and push again” in the South China and East China Seas, Shi said.

Ukraine rebels are retreating for last stand

By David M. Herszenhorn
THE NEW YORK TIMES

KIEV, Ukraine — Separatist rebels retreated Monday from positions in eastern Ukraine, apparently blowing up bridges, and began building barricades in the two largest cities, Donetsk and Luhansk, in anticipation of a final stand against advancing government troops.

While separatist leaders have complained bitterly about being sold out by their allies in Moscow, Ukrainian officials said Monday that they had succeeded in sealing the previously porous border with Russia, stopping the influx of new weapons and fighters.

The action Monday came after a series of surprising successes by Ukraine’s underequipped and underfunded military, which in recent days has driven the rebels from some strongholds that were seized early in the three-month rebellion. It has accomplished this

without encountering strong resistance or a reaction from Moscow.

Ukraine’s president, Petro Poroshenko, called off a cease-fire last week and vowed to defeat the rebels on the battlefield. But that has raised the prospect of protracted and bloody urban warfare with significant civilian casualties.

Russia’s president, Vladimir Putin, who warned last week that he would not stand by while the safety of Russians was endangered, did not comment on the deteriorating situation. That was left to the foreign minister, Sergey Lavrov, who complained about damage to civilian areas but mentioned nothing about possible military action. The Kremlin appears to have taken that option off the table, in favor of a negotiated settlement that might install close allies of Russia as the governors of Donetsk and Luhansk.

“A quick end to the bloodshed is in our common interest,” Lav-

rov said at a news conference in Sofia, Bulgaria. “We believe that there can be no excuses, pretexts for postponing the immediate end of the shooting, as a result of which more peaceful civilians suffer, the outflow of refugees multiplies and civilian infrastructure is destroyed.”

In an apparent bid to slow the oncoming troops, the pro-Russian insurgents blew up two bridges on the road to Donetsk from Sloviansk and Kramatorsk, two long-occupied provincial cities where rebels were ousted over the weekend.

At the same time, Ukrainian officials said their troops were setting up blockades to isolate separatists. “The points of access to these cities are being blocked so that militants are not delivered weapons or manpower or other resources,” Andriy Lysenko, a spokesman for Ukraine’s National Security and Defense Council, said at a briefing in Kiev.

Israel warns Gaza targets by phone and leaflet

JERUSALEM — The call came to the cellphone of his brother’s wife, Salah Kaware said Tuesday. Kaware lives in Khan Younis, in southeast Gaza, and the caller said that everyone in the house must leave within five minutes, because it was going to be bombed.

A further warning came as the occupants were leaving, he said in a telephone interview, when an Israeli drone apparently fired a flare at the roof of the three-story home. “Our neighbors came in to form a human shield,” he said, with some even going to the roof to try to prevent a bombing. Others were in the stairway when the house was bombed not long afterward.

Seven people died, Kaware said, a figure also stated by the Palestinian Health Ministry in Gaza, which also said that 25 people were wounded. The Israeli military said that targeted houses belonged to Hamas members involved in launching rockets or other military activity, and that they had been used as operations rooms.

But the events Tuesday were another example of a contentious Israeli policy in which occupants of a building about to be bombed or shelled are given a brief warning in Arabic to evacuate. The Israelis have used such telephone calls and leaflets for years now, in a stated effort to reduce civilian casualties and avoid charges of indiscriminate killings or even of crimes against the rules of war.

During Operation Cast Lead in Gaza in late 2008, the Israelis often used telephone calls and leaflets to tell occupants to leave before striking. In some cases, the Israelis fired missiles without explosive warheads onto the roof to get Palestinians who had gathered there to leave. The Israelis called it “the knock on the roof.” But often, as in Khan Younis on Tuesday, people die in any case, because they ignore or defy the warnings, or try to leave after it’s too late.

The Israelis also regularly drop leaflets over Gaza urging citizens to not cooperate with terrorism and to stay away from border zones, an injunction that has been criticized by human-rights advocates, like the Palestinian Al Haq organization.

—Steven Erlanger and Fares Akram, The New York Times

Lawmakers in Iraq will meet again to try to form a government

BAGHDAD — The Iraqi parliament Tuesday set its next meeting for Sunday as it tries again to form a new government after a failed attempt last week.

It is unclear, however, whether there will be any progress or even enough lawmakers present to form a quorum at the meeting.

The parliament’s administrative office had told lawmakers Monday that there would be no session until Aug. 12. That announcement was met with dismay by the international community, which has been urging Iraq to act quickly to form a government that reflects the country’s diverse and often hostile religious sects and ethnic groups.

Later Monday, the temporary speaker, Mehdi al-Hafith, announced that parliament would attempt to meet Sunday “in order to safeguard the public interest and continue to build democracy.”

The first step under the constitution is to elect a speaker, traditionally a Sunni, and then within a month to name a president and two vice presidents. Two weeks after that, the parliament must choose a prime minister.

The current parliament, which was elected in April, has not yet formed a government, in part because there is antagonism toward Prime Minister Nouri al-Maliki despite his party receiving the largest number of votes. There now seems to be a focused attempt to remove al-Maliki and find an acceptable alternative.

There is no consensus candidate yet for prime minister.

—Alissa J. Rubin, The New York Times

Pope asks forgiveness as he meets for first time with victims of sex abuse

VATICAN CITY — Pope Francis on Monday used his first meeting with victims of clerical sex abuse to offer his strongest condemnation of a crisis that has shaken the Roman Catholic Church, comparing priests who abuse minors to “a sacrilegious cult,” while begging forgiveness from victims and pledging to crack down on bishops who fail to protect children.

By meeting with six victims from three countries, Francis was trying to show resolve — and personal empathy — to address an issue on which he has faced criticism in what has otherwise been a popular papacy.

While some advocates for victims praised the meeting, others dismissed it as little more than a publicity stunt.

Francis first greeted the six victims — two people each from Ireland, Britain and Germany — Sunday after they arrived at a Vatican guesthouse. On Monday, he led them in a private Mass at a Vatican chapel, where he offered a strongly worded homily condemning an abuse scandal that began to surface decades ago. Francis also met with each victim in sessions that, in total, lasted more than three hours.

“Before God and his people, I express my sorrow for the sins and grave crimes of clerical sexual abuse committed against you,” Francis said during his homily, according to a text released by the Vatican. “And I humbly ask forgiveness. I beg your forgiveness, too, for the sins of omission on the part of church leaders who did not respond adequately to reports of abuse made by family members, as well as by abuse victims themselves.”

At least one of the victims who met with Francis left impressed. Marie Kane, 43, who endured abuse by a priest in Dublin, described the meeting as “pretty amazing” and told The Irish Independent that the pope “listened intently” as she spoke to him.

She said she told Francis that the church needed greater accountability, and that she would not feel as though progress had been made until bishops who covered up the abuse had been removed.

Other victims advocacy groups echoed that sentiment, arguing that the Vatican still has done too little to create a strong, accountable system to prevent abuse and to stop bishops from protecting abusive priests.

—Jim Yardley, The New York Times

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

Solution, page 8

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

Solution, page 8

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

Solution, page 8

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–9. Follow the mathematical operations for each box.

The grad students in my lab are so overworked!

Well, as their UROP, you'll lighten their burden!

I still wish there was something more I could do for them...

Yes, I'm sure we DO NOT want therapy cats!

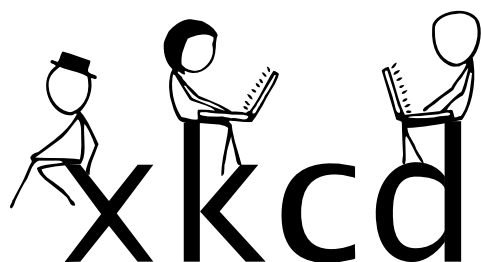
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54 Holler
58 Letter after cee



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

by Randall Munroe

[1355] Airplane Message

ADRIAMYCIN, ONE OF OUR MOST POTENT CHEMOTHERAPY DRUGS COMES FROM THE DIRT FROM AN ITALIAN CASTLE.

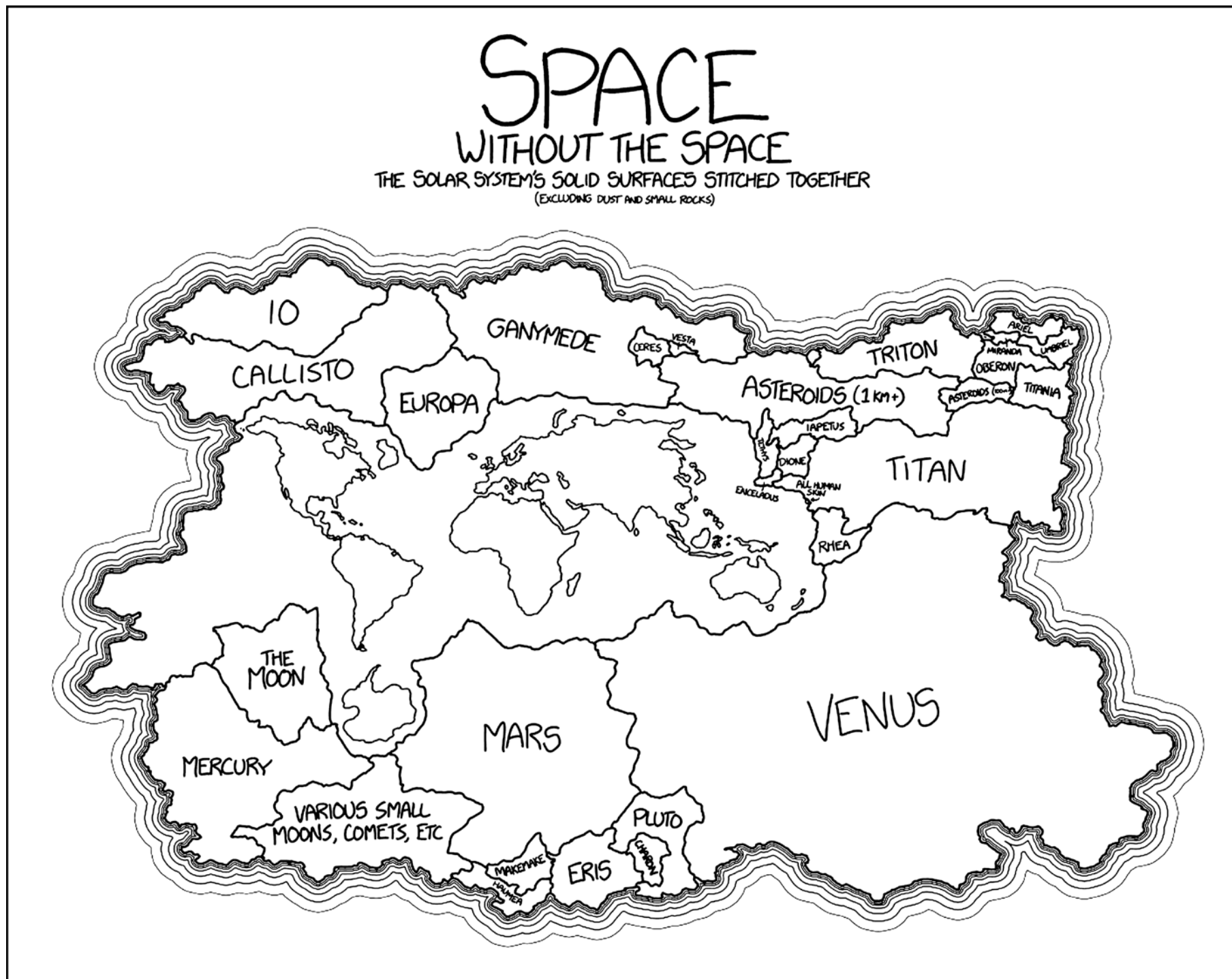


MY HOBBY:

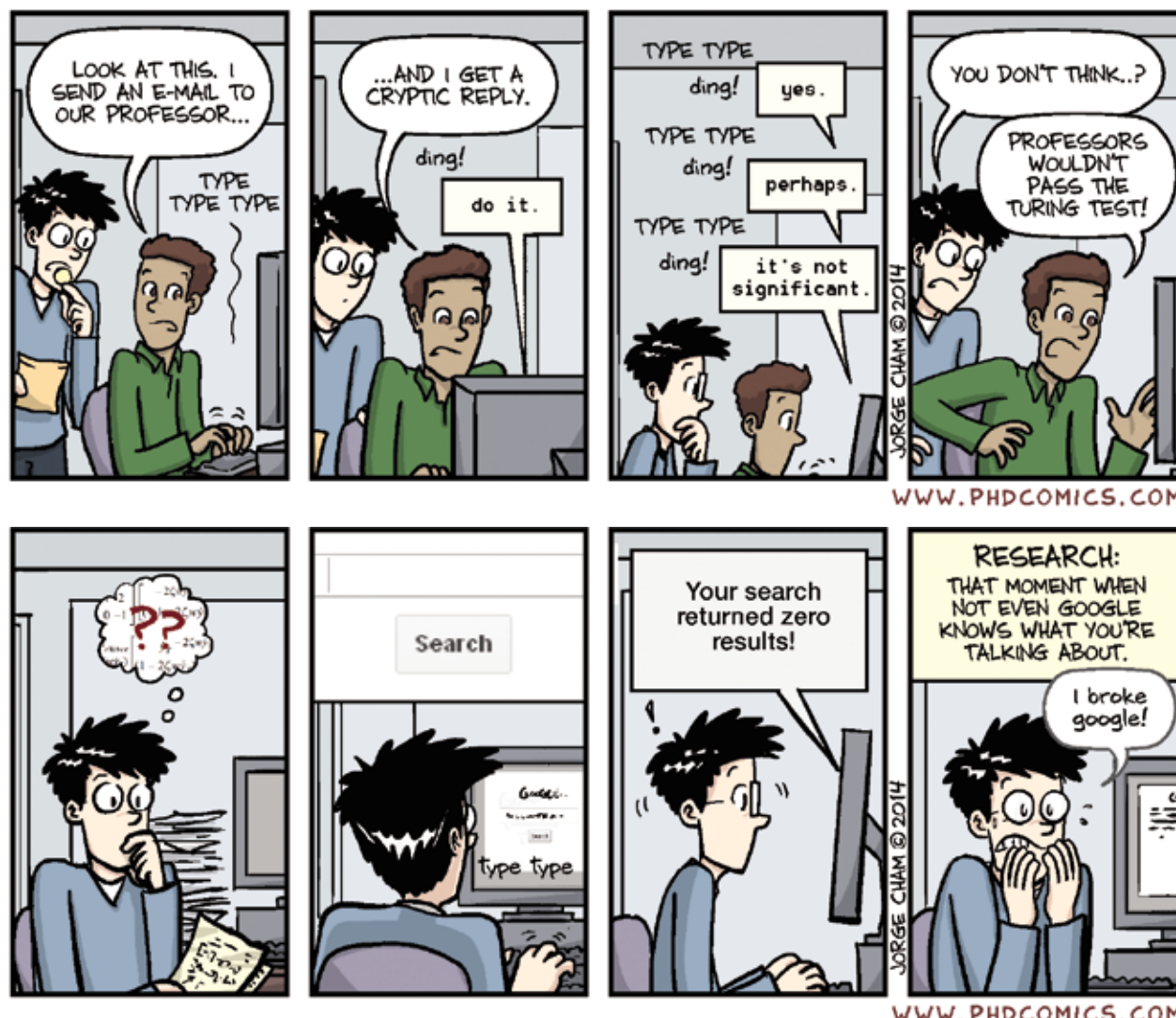
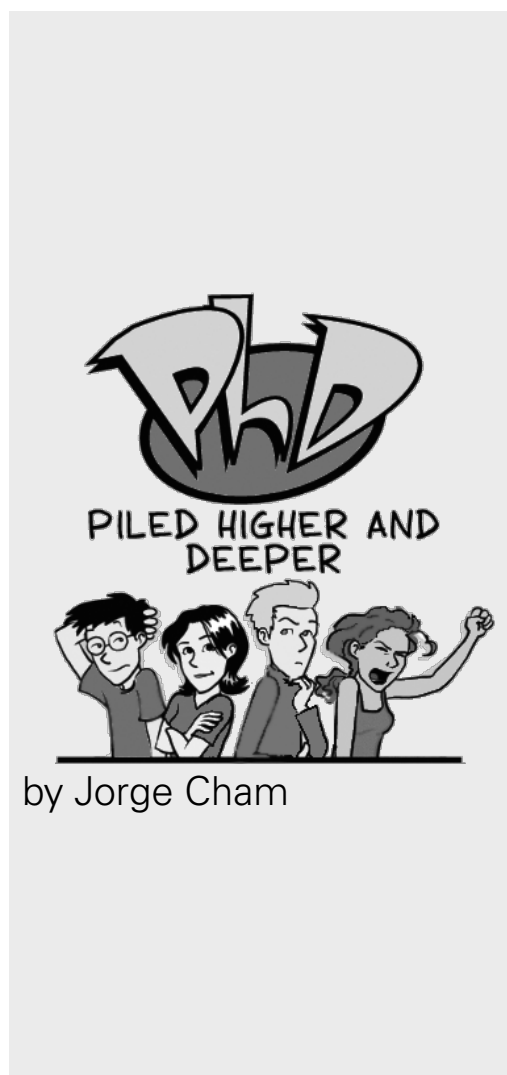
BREAKING INTO AIRPLANE HANGARS AND REPLACING THE ADS ON THEIR GIANT BANNERS WITH COOL FACTS

PHARAOH IRY-HOR, FROM THE 3100s BC, IS THE FIRST HUMAN WHOSE NAME WE KNOW

[1389] Surface Area



This isn't an informational illustration; this is a thing I think we should do. First, we'll need a gigantic spool of thread. Next, we'll need some kind of ... hmmm, time to head to Seattle.



Architecture graduate student Kaitlin Goldstein dies in India

Goldstein passionate about improving energy efficiency

By **Matt Rocheleau**
THE BOSTON GLOBE

Kaitlin R. Goldstein was an academic standout. Studying architecture and engineering, she earned a bachelor’s degree from Brown University and a master’s from the University of Texas at Austin before pursuing a doctorate at the Massachusetts Institute of Technology, where she was part of a team that twice won a White House competition on energy efficiency research.

“It’s fair to say that she knew more about practical energy efficiency programs nationally than anyone else in our group,” said one of her professors, Les Norford, associate head of MIT’s architecture department.

But Goldstein was never one to revel in her success.

“Helping others motivated her more than academic fame,” Norford said.

Goldstein, a 28-year-old native of Providence, was found dead in northern India on June 21, one week after officials believe she slipped while on a morning run on a remote mountain trail and fell several hundred feet down a cliff. She was in India to participate in a weeklong workshop on energy and development organized by the MIT-affiliated Dalai Lama Center for Ethics and Transformative Values and the Masdar Institute of Science and Technology in Abu Dhabi, campus officials said.

Campus officials said that she planned to stay in India to install solar

panels for an off-grid electrical installation at a Buddhist monastery.

“She was just discovering opportunities to work in developing countries and saw such activities as a possible career path,” Norford said.

An energy fellow at the MIT Energy Initiative and a fellow of the Martin Family Society for Sustainability, Goldstein was a member of the Energy Education Task Force and active in the Campus Energy Task Force, he said.

‘Her impact on her classmates and me was immediate.’

Kurt Teichert

“Kate was very dedicated to reducing energy use in buildings and to clean energy sources,” Norford said.

“I am most gratified by the process of bringing together people of diverse backgrounds and skill sets, fostering truly interdisciplinary and integrated design,” Goldstein wrote in a description of herself on the initiative’s website.

She was also a member of the Northeast Sustainable Energy Association.

Travis Niles, manager of communications and information technology, posted a farewell on the association’s website. “I speak for all of us at NESEA when I say that we’re stunned and deeply saddened by Kate’s death,” he wrote.

Niles included a statement from

Kurt Teichert, a lecturer at Brown University, who knew Goldstein.

“When I first met Kate, she was waiting outside my Brown office as I arrived early in the morning,” Teichert wrote. “She was still in her running gear and had a dog at her side, as she often did any time I saw her outside of the classroom. She was full of ideas and questions about her growing interest in renewable energy, and she sought me out for guidance. Her impact on her classmates and me was immediate.”

The morning Goldstein went missing on June 14, fellow students and instructors at the Students’ Educational and Cultural Movement of Ladakh campus where she was staying began to search for her.

Local police joined the search that afternoon, before the Intelligence Bureau of India, the US Embassy in New Delhi, the Bureau of Consular Affairs at the US State Department, the FBI, and others became involved, officials said.

MIT said it retained a private, Mumbai-based security firm to help investigate.

Her parents, who traveled to India to assist with the search, told MIT that her body was found in a ravine below the trail. Authorities believe that Dr. Goldstein, a competitive runner, slipped on a loose rock.

Before her body was found, her brother Adam Goldstein told WPRI-TV in Providence that she was “really passionate about helping poorer places out.”

Paul Uche, recent alum, dies after leukemia battle

Paul U. Uche ’13 passed away on June 19 at the age of 23 following a two-year battle with leukemia.

In an email to the MIT community on June 26, President L. Rafael Reif noted Uche for his “intellectual breadth, creativity, leadership, optimism and open heart.”

Uche was diagnosed with acute myeloid leukemia in the middle of his senior year at MIT. He took part of the semester off for treatment, but, determined to resume his studies, returned to MIT in the spring of 2013. He graduated with a major in chemical engineering and a minor in creative

writing. He was an engineer, a writer, and a musician who was deeply involved in the MIT community through the Gordon-MIT Engineering Leadership program, at the Public Service Center, and as president of the Sigma Chi fraternity. After returning to his home in Toronto for treatment, he pursued his interests in writing and music, producing and recording a hip-hop album from the hospital. Through his search for a bone marrow donor, Uche raised awareness for leukemia and supported the doctors that treated him.

—Katherine Nazemi

Library books now automatically renewed

Loans from MIT Libraries are now automatically renewed three days before the due date, so long as there are renewals available and no requests. MIT Libraries hopes that this new policy, which took effect May 15, will save patrons effort and time.

MIT faculty, students, and staff can generally receive up to five automatic

renewals of 60 days each. However, automatic renewal may not apply in some circumstances (e.g., to material borrowed from non-MIT libraries).

Patrons will be notified by email when their items have been automatically renewed or if automatic renewal is not possible.

—Mary Hwang

John King, physics professor emeritus, dies at 88

Experimental physicist remembered for passion in education, inventions, and science

By **Teresa Lynne Hill**
DEPARTMENT OF PHYSICS

Professor emeritus John G. King ’50, PhD ’53, an experimental physicist, transformative physics educator, and leader of the MIT Molecular Beams Laboratory in the Research Laboratory for Electronics for 42 years, died on June 15 at his summer house in Wellfleet, Mass. A longtime resident of Cambridge, King was 88. The cause of death was congestive heart and renal failure.

“John was an inspiring teacher and experimentalist. His educational passion was creating hands-on experiments built from ordinary parts you can find at any hardware store, what he lovingly called ‘mulch,’” said MIT senior lecturer in physics, and former King student, Peter Dourmashkin ’76. “He was MITx before MITx.”

King was born in London and educated in France, Switzerland, and the United States. He came to MIT as an undergraduate in 1943 and completed his undergraduate studies in physics following war service for the U.S. Army, U.S. Navy, and the Harvard Underwater Sound Lab. He joined the MIT physics faculty in 1953. King was named the Francis L. Friedman Professor of Physics in 1974 and retired from MIT in 1996.

King was renowned for his null experiments — those designed to test fundamental principles. He

helped develop the atomic clock and invented the molecular microscope. King’s best-known experiment, still found on the first page of most electricity and magnetism textbooks, is the measurement of the charge magnitude equality of the electron and the proton, and the neutrality of the neutron to a 10-20 of an electron charge. King also conceived an imaginative experiment, prompted by cosmological ideas, to set a hard limit on the possibility that matter, over cosmological time, begets new matter, a version of what was once called the steady state cosmology.

Building atomic and molecular beam research

Professor of physics emeritus Rainer Weiss ’55 was a colleague of King throughout his student and faculty years at MIT and considers him to be “one of the most creative and imaginative experimental physicists of his generation.” Both physicists were students of Jerrold Zacharias, who began the Molecular Beam Laboratory at MIT shortly after World War II.

Molecular beam experiments measure the properties of individual atoms in a vacuum unperturbed by interactions with other molecules. The technique provides precise and universally reproducible values for the energy levels and other parameters of these quantized

systems. King began his work in molecular beams by pioneering new methods to measure the charge and current distributions in the nuclei of the halogens. He discovered the magnetic octupole moment of the common isotope of iodine.

During his years as director and principal investigator of the Molecular Beam Laboratory, King transformed the research conducted there. It branched into molecular beam techniques applied to collective body physics, cosmology, and biophysics. More than 100 undergraduate and 25 doctoral students obtained their degrees working on these topics during King’s tenure at the laboratory.

Reinventing physics education

Dissatisfied with the lab exercises used in mid-century physics pedagogy, King worked tirelessly on innovative methods that stressed hands-on learning and independent thinking. In 1966, he initiated the Project Lab, in which students developed their own open-ended research projects. His belief that anyone could “find something interesting to study about any mundane effect” reflects the independent spirit of King’s own early and eclectic science education. He told his students that “the best way to understand your apparatus is to build it.”

As an adviser, King quickly became a project participant. Charles H. Holbrow, professor of physics emeritus at Colgate University and currently a lecturer at MIT, recalled that King had “the wonderful gift of seeing physics in everyday phenomena and turning these into research projects.” Some 2,000 MIT undergraduates experienced Project Lab.

With other educators in the late 1950s and ’60s, King worked on the revitalization of high school physics, following the startling realization on the part of Zacharias that “while students had taken physics, they didn’t understand anything.” When the 1957 launching of Sputnik spurred a nation-wide alarm and allocation of money to improve science teaching, King became deeply involved. In cooperation with the influential Physical Science Study Committee (PSSC), he produced — and acted in — eight physics movies, including “Times and Clocks,” “Interference with Photons,” “Size of Atoms from an Atomic Beam Experiment,” and “Velocity of Atoms.”

A life of invention

Family, friends, and colleagues paint a portrait of an energetic, curious, and engaging man who applied these characteristics equally to his intellectual, professional, and personal lives. King’s wife, Jane Williams, recalls him as “interesting, imaginative, ingenious and lots of

fun.” In addition to his enthusiasm for physics and the value of science as the basis for understanding the world around us, she says, he was throughout his life “passionate about classical music, poetry, and any kind of dictionary. Since his early years were spent in France, he cared about things French, including French wines.”

King’s French stepfather introduced him to the tinkering that informed much of his approach to science, especially science teaching. As a high school student at Phillips Exeter Academy, he had his own laboratory. In life, as in science, he remained a relentless tinkerer, once rebuilding a bus, complete with bunks, to transport his large family to the farm in Woolwich, Maine, where he and his first wife, Elizabeth, lived for many years. She and several of their eight children still live in or around Woolwich.

King was the recipient of many honors and awards for contributions to physics and physics education. These include the Alfred P. Sloan Award (1956), the AAPT Robert Millikan Medal (1965), the E. Harris Harbison Award (1971), and the Oersted Medal (2000), the most prestigious award of the American Association of Physics Teachers.

A memorial service will take place at MIT in October.

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Solution to Storm

from page 5

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

Solution to Tornado

from page 5

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

Solution to Hurricane

from page 5

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

Solution to Surge

from page 6

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

Solution to Thunder

from page 6

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

MIT people search now more private

Grad student petition yields results

MIT search, from Page 1

Christopher D. Aakre, a fifth-year PhD student in the biology department and Graduate Student Council (GSC) secretary.

Now that the directory is online, personal information is much more easily accessible, which in turn can facilitate misuse. Concerned about students’ privacy and the possibility of harassment, Professors Amy E. Keating and Stephen P. Bell, co-chairs of the Biology Department Graduate Committee, sent out an email in April to graduate students in the biology department.

This email was an effort to “make graduate students aware of what information was being disclosed in the on-line directory,” said Aakre in an interview with *The Tech*, and “encourage grad students to submit a request for repression if they felt it necessary.”

Aakre and other members of the Graduate Student Council (GSC) decided that this issue deserved more attention. They sent out a poll via email asking graduate students in the biology department how they felt about specific pieces of their personal information being publicly available.

Of the 112 biology graduate students who responded, a majority of graduate students thought that their email addresses, office phone numbers, and office addresses should be public, and that their personal phone numbers and home addresses should be private.

Aakre said, “The poll was more just to get a pulse on what graduate students thought,” adding that

it was only given to students in the Biology Department, and therefore does not represent the entire graduate student population.

Aakre and his colleagues presented the survey data and their perspectives on this issue to the MIT administration, whom he said were “incredibly collaborative and willing to work with us.” He added that additional polling was not needed to bring relevance to this issue.

Aakre said that he received positive feedback from graduate students, some of whom “had personally suffered harassment as a result of this information being publicly disclosed.”

Noting that students can contact one another via social media and email more easily than with the contact information in the MIT directory, Callahan said, “If you look back on the purpose for displaying that information, it’s no longer needed.”

“I’d like to thank the students in terms of working with administration to bring forth a good solution,” said Callahan, “I think the changes are to the benefit of the MIT community.”

Though many students from Aakre’s survey felt that information should only be available to people within the MIT community, there is no current discussion of implementing a certificate-protected directory.

“I think this is information that most people are comfortable sharing with the public; it’s your professional contact information,” said Aakre.

Maseeh open to FYRE

Relaxing of restrictions will allow Maseeh to more actively participate in REX events

Maseeh, from Page 1

visor they were assigned — whether through RBA or through the Undergraduate Advising and Academic Programming office — with the exception that “students moving out who previously were assigned an administrator will be reassigned to a UAAP advisor.” This allows for RBA groups at Maseeh to have members who no longer reside in the dorm.

Associate Dean of Advising and New Student Programming Elizabeth C. Young says there is really “no new policy” regarding advising. The change will have “no bearing on who the freshmen have as their advisors because the faculty that are assigned their advisors will keep those students,” she said.

Maseeh is continuing work with the UAAP this summer to implement the policy to get ready for orientation and REX in the fall.

Initially, the decision that Maseeh would be an RBA dorm meant it had to impose a no-move policy.

Carroll said, “When Maseeh opened, we wanted the house to be part of the RBA program because of the support it could provide our freshmen. Adding that many freshmen to the RBA program, however, created understandable challenges for the UAAP in developing and managing advisor-freshman assignments, so we agreed to a no-move policy for our freshmen.”

But as the RBA program continued to evolve, relaxing the moving restrictions began to seem possible.

“We knew that there were student concerns about this for quite a while,” Carroll said.

Maseeh Hall President Austin D. Fathman ’15 said that the no-move policy had a “locking-in feeling.”

“If you chose Maseeh and got into Maseeh, you were locked in.

And that was something that we wanted to change,” he said. “We wanted people to know that Maseeh was their home, and not have a fear of coming in.”

Maseeh House Government took up the issue with their housemasters, who then brought the discussion to the UAAP.

Both the UAAP and the dean for undergraduate education, Dennis Freeman PhD ’86, agreed to let Maseeh adopt the same policy as Next House with regard to freshmen transfers.

“Basically, what this [policy change] allows is that freshmen are able to come in and decide if Maseeh is right for them, just like with most of the other dorms,” Fathman said.

Relaxing the no-move policy also allows Maseeh to participate more fully in REX.

Since freshmen couldn’t enter Maseeh if they hadn’t been assigned to it through the summer housing lottery, Maseeh’s participation in REX events was limited. The no-move policy meant that “the drawbridge was pulled up,” Fathman said.

“In previous years people participated in REX — I put that ‘participated’ in quotes — we threw events, we had a good time, but it was very dorm-[centric] because we knew that while it was open to the community, not a lot of people were interested in coming to check us out. You couldn’t get into Maseeh at that point, so there wasn’t really much point in exploring Maseeh,” he said.

But now that the no-move policy has been lifted, Maseeh will be able to reach out to more people during REX. “I think this year will be a little more focused on bringing everyone on campus in and still having fun events that way,” Fathman said.

Irwin Oppenheim passes away

Theoretical chemist praised by students and colleagues

By Liz McGrath
DEPARTMENT OF CHEMISTRY

MIT professor emeritus of chemistry Irwin Oppenheim, 84, of Cambridge, passed away on June 3 from complications following cardiac surgery.

Oppenheim carried out his undergraduate studies in chemistry and physics at Harvard University, graduating summa cum laude in 1949. He attended graduate school at the California Institute of Technology under John Gamble Kirkwood; when Kirkwood left for Yale University, Oppenheim followed him, completing his PhD in physical chemistry in 1956. His thesis research involved some of the first usage of the Wigner functions and expansion in powers of Planck’s constant to develop quantum corrections to classical distribution functions. These distribution functions were then exploited to deduce thermodynamic properties and transport coefficients.

Oppenheim joined MIT’s Department of Chemistry in 1961 as an associate professor — notably, its first theoretical chemist. He was promoted to full professor in 1965.

Oppenheim’s research at MIT concentrated on a molecular description of relaxation phenomena in gases and liquids; he, his students, and collaborators made many important contributions to the field.

“One important contribution is his explanation of the origin of the ‘long time tails’ unexpectedly observed in early molecular dynamics simulations of the correlation function of the viscosity of gases,” says Institute Professor emeritus John M. Deutch, who was Oppenheim’s second PhD student. “He improved our understanding of the microscopic basis of hydrodynamics, Brownian motion, light scattering, [and] magnetic resonance, and this work influenced thinking about these topics throughout the world. He was an expert on chemical thermodynamics and wrote two books on this subject.”

“With his passing, an important index [of] human civilization – ‘global aggregate knowledge of chemical thermodynamics’ — has declined 65 percent,” Deutch adds. “Given all of Irwin’s contributions,

I have thought for some time that his work has not received the recognition it should from the scientific community.”

During his lifetime, Oppenheim published 247 publications. In 1996, he assumed emeritus status, but remained active in the Department of Chemistry until his death.

Oppenheim was an excellent teacher, colleagues say, who taught decades of MIT undergraduate and graduate students introductory physical chemistry and statistical thermodynamics. He was an inspired PhD thesis and post-doctoral advisor to more than 50 individuals, many of whom went on to university positions across the world, and some at MIT. His warm mentoring ensured decades of devotion and friendship from his students.

“Irwin was a master in thermodynamics and statistical mechanics. His theory was marked by rigor and elegance, and has influenced a generation of theorists,” says professor of chemistry Jianshu Cao, who in teaching 5.72 (Non-Equilibrium Statistical Mechanics), would invite Oppenheim to present a week of lectures in exchange for a visit to a Chinese restaurant. “Irwin had a free choice of topics for the week, but always presented his version of Brownian dynamics theory. These lectures were delivered with precision and clarity, rarely seen in a classroom these days. Except for a few hardcore theory students, it was a challenge to follow his equations that covered the blackboard like wallpaper, but every student left in awe of this grand master and the classic style he exemplified.”

David Chandler ’66, a former undergraduate student of Oppenheim’s who is now the Bruce Mahan Professor of Chemistry at the University of California at Berkeley, says, “Of all the wonderful teachers I learned from at MIT, Irwin Oppenheim influenced me the most. My textbook borrows from his pedagogical style, and my research career began on the road he paved for me. I owe much to him, and I will miss him greatly.”

Throughout this career, Oppenheim collaborated with colleagues across the globe — notably from Japan, Israel, and the Netherlands.

His Dutch coworkers — Nico van Kampen, Peter Mazur, Ubbo Felderhof, and Dick Bedeaux — often visited MIT, resulting in friendships and collaboration with many members of the department.

“It was always fun to stop by his office and have a moment of revelation,” Cao says, noting Oppenheim’s warm, fun-loving disposition. “Irwin had a high standard for science, but he would always express his opinion with a good sense of humor and a few loud laughs. After lunch, Irwin used to have an afternoon cigar, and sometimes asked me to join him. Though not a fan of cigars, I would happily listen to his jokes and wise comments. In recent years, he became less critical about science but still possessed a sharp mind and quick wit. I have fond memories of these light moments and will miss him dearly.”

“Irwin was my ‘academic grandfather,’ and he treated me like family from the moment I walked in the door of MIT almost one year ago,” says Adam Willard, an assistant professor of chemistry. “We talked frequently, sometimes about science — he was truly a master thermodynamicist — but quite often about all those important nonscientific aspects of life. He was a great listener, unusually wise, and had a fantastic sense of humor. His presence here will be sorely missed.”

Irwin Oppenheim was born in Boston in 1929 to James and Rose (Rosenberg) Oppenheim. He was an only child, but grew up in the company of many aunts, uncles, and cousins. He married Bernice Buresh in 1974. In addition to his wife, he is survived by a son, Joshua Buresh-Oppenheim, a daughter-in-law, Rachel Schorr Hirsch, and a granddaughter, Rosalind Iona Hirsch Oppenheim.

Oppenheim was a fellow of the American Academy of Arts and Sciences and the American Physical Society, a member of the Washington Academy of Science, and the recipient of the American Chemical Society’s Joel Henry Hildebrand Award.

Plans for a memorial service will be announced in at a future time.

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AN INVITATION FOR MIT STUDENTS

A Special Meetup

“Time Travel To Backups”

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With NuoDB Engineer and Time Travel Expert
Ross Shaull, Ph.D. in Computer Science

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State officials release causes of graduate student deaths

The deaths of graduate students Hadi Kasab and Eliana Hechter, whom MIT lost this spring, have since been ruled suicides.

Hechter, a first-year medical student in Harvard and MIT's joint Health Sciences and Technology program, died by hanging in April, the *Cambridge Day* reported in May, citing state police records.

Kasab, who was on track to graduate last month with a master's degree from MIT's Computation for Design and Optimization program, was found dead in his dormitory room in March. According to his death certificate, Kasab died of cyanide poisoning.

This determination was released in June. For Kasab's family in Lebanon, the wait for answers had been prolonged by a backlog of toxicology tests at the state medical examiner's office, *The Boston Globe* reported.

Information about MIT's counseling services can be found at <http://together.mit.edu/>.

—Leon Lin

Admissions considers more gender choices

Changes won't be on this year's app

Gender options, from Page 1

to see MIT take the next steps in recognizing that all genders are respected and important to recognize.

"When you see the familiar 'male' and 'female' box options on a day-to-day basis, you are painfully reminded that unless you fit into these two categories, you are not recognized by the system and its benefits," Brinton told *The Tech*.

Hannah S. Wirtshafter, a graduate student at MIT, likes the blank box option but thinks that listing trans* as a separate option "excludes and otherizes trans* people who identify as, and thus are, male and female." In addition, she expressed concern that adding a trans* option would put a burden on trans* people to disclose this information.

This isn't the first time that MIT has

updated its application process to allow LGBTQ applicants to share about how they identify. Two years ago, MIT added an optional question on sexual orientation, joining only two other U.S. colleges (Elmhurst College and the University of Iowa) in asking about sexual orientation at the time.

"We did this because for some students, our questions were limiting — some students felt that the questions as we had them did not allow them to properly describe themselves," wrote Schmill. "Adding these questions allows us to better understand a student's context. The application is designed to get to know students as people, and this can be an important part of a student's identity and background."

He added, "We also wanted to send a strong message that MIT is a place that is welcoming to all students."

Seth Teller, EECS professor, mourned

Students, faculty remember the life of outstanding advisor and friend

By MIT News Office

Seth Teller, a professor of computer science and engineering at MIT who was well known for his efforts to advance human-robot interactions, died last Monday. He was 50, and he had been a member of the MIT faculty since 1994.

President L. Rafael Reif announced the news in an email to the MIT community.

"I knew Seth as a person of great human warmth and intellectual intensity," Reif wrote in his letter. "He was a brilliant engineer and a gifted advisor with a passion for new challenges. His loss is difficult to grasp."

Teller was a member of MIT's Department of Electrical Engineering and Computer Science (EECS) and Computer Science and Artificial Intelligence Laboratory (CSAIL). He led CSAIL's Robotics, Vision, and Sensor Networks group, whose work aims to enable machines to become aware of their surroundings and interact naturally with people in health-care, military, civilian, and disaster-relief settings.

"Seth's outstanding contributions as a researcher, teacher, mentor, and colleague set a standard that has inspired many of us," EECS Department Head Anantha Chandrakasan and CSAIL Director Daniela Rus wrote in a joint letter to their communities. "He had a unique ability to envision new approaches to problems, then assemble, motivate, and guide large research teams to accomplish things far beyond what they thought possible. As a colleague his reflexive openness and friendliness were a delight; he always seemed to have something new to talk about and he shared it in a way that drew you into the excitement that bubbled up from him."

The overarching theme of Teller's research could be described as making robots that work with, for, and as extensions of people. His recent projects included wearable devices that provide information about nearby terrain, objects, text, and people to the visually impaired; a self-driving car; an unmanned, semiautonomous forklift; a robotic wheelchair operated by voice command; and a humanoid robot that performs dangerous tasks with limited human assistance.

"Seth had so many talents — as a builder of novel systems, and a master of a broad range of disciplines including robotics, vision, graphics, and human-computer interfaces," says colleague John Leonard, a professor of mechanical and ocean engineering. "He has left a profound legacy in robotics."

Success in robotics competitions

Teller led the MIT team that will compete in the final round of the prestigious DARPA Robotics Challenge (DRC), a competition sponsored by the Department of Defense's Defense Advanced Research Projects Agency (DARPA) to promote innovation in robotics technology for disaster response. The competition calls for a humanoid robot to perform a series of tasks related to a disaster-response scenario.

Last December, the MIT team secured one of 11 prized spots in the final round of the DRC, currently slated for June 2015. The team participated in two rounds of competition, beating out more than 100 other teams, to secure a place in the finals. During the latest round of competition, the MIT team had to navigate a humanoid robot through a series of trials including walking, climbing, and handling tools and other objects.

Teller had also led an MIT team that placed fourth in an earlier DARPA challenge, to develop an autonomous car. The finals in the autonomous-car competition took place in late 2007, and the following spring, Teller announced plans to develop an autonomous forklift, which his group demonstrated in 2010.

From automobiles to forklifts

The way in which Teller transitioned from automated cars to automated forklifts illustrated two of his abiding concerns: Beyond the technical feat of simply getting the forklift to do what it's instructed to do, his team concentrated on making its movements predictable. The problem of robotic trajectory planning is enormously complicated; in the interest of efficiency, roboticists typically employ planning algorithms that, while easy to compute, yield jerky and counter-intuitive movements.

Because Teller was interested in robots that could blend seamlessly into human environments, his group also concentrated on planning algorithms that would make their motions smoother and less obtrusive.

The forklift also responded to speech, which took Teller's team into an entirely different realm of computer science research: natural-language processing. In the abstract, natural-language processing is highly difficult, but it becomes exponentially easier when the range of possible interpretations can be constrained. Special-purpose robots' limited repertoires

MIT student set to complete solo flight around the world

Rising MIT sophomore Matthew L. Guthmiller '17 is on his way to becoming the youngest person ever to fly solo around the world. On May 31, he took off from El Cajón, California, beginning a 26,600-mile journey that will take him to five continents and possibly secure him the world record.

With his flight, Guthmiller hopes to raise \$250,000 in donations from family members and corporate and private sponsors for Code.org, a nonprofit working to get computer science included as a core part of national K-12 curricula. But his biggest goal for the journey, he said in an interview with NBC News, is to "inspire other people to go shoot for really big things."

Guthmiller's time-to-beat

was set by Australian Ryan Campell, who completed a global circuit when he was 19 years, seven months, and 25 days old — an age Guthmiller will reach on July 24. His current itinerary has him back to El Cajón on July 11.

Guthmiller is flying a leased 1981 Beechcraft A36 Bonanza: a six-seat, single engine plane. Guthmiller created the flight plan himself, planning a route around the world whose many stops include England, Greece, Egypt, and India for a total flight time of 168 hours.


Currently, Guthmiller is heading back to the United States via Hawaii — his final stop before returning to El Cajón and hence completing his journey.

—Katherine Nazemi

Solution to Crossword

from page 6

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



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Wed. 7/16, 1pm - 6pm
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It is MIT policy to allow employees time off with pay to donate blood at the drives that are sponsored on campus.

Blood Drives are sponsored by ARCTAN,
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American Red Cross

Goalkeepers shine, giants fall at the World Cup

Spain, England eliminated as several goalkeepers fight valiantly to keep teams afloat

FIFA, from Page 12

defenders on offense and five defenders on defense. Such formations were once abundant, but were largely replaced by four-defender formations. But teams like Chile, Mexico, Costa Rica and Netherlands all played three defenders and managed to at least advance past the group stage. This may be a sign that three-defender formations may be returning to the soccer world, which could produce more entertaining matches. I would definitely be happy to see that.

The bad

While certain teams managed to surprise soccer fans and put on good matches, certain teams simply did not meet expectations.

The first team that comes to mind is Spain. Winners of Euro 2008 and 2012 as well as the 2010 World Champions, Spain came in as a big favorite to win the tournament among many. But their world-champion image was shattered on the second day of competition when they suffered a shocking 5-1 defeat against Netherlands. Spain did not look like the team they once were. That teams now know how to counter the tiki-taka did not help their cause, but their downfall is a result of their style of play. Spain looked extremely disorganized on the pitch. There was a clear lack of communication among the players.

Furthermore, most of the players on the team had had a long and exhausting club campaign, as key members played in the Champions League until the very end. Casillas also had a terrible run in the World Cup. Perhaps his woes can be attributed to his age or the psychological wear and tear of long bench stints on Real Madrid. Whatever the cause, Casillas hasn't been the goalkeeper he once was for some time.

In addition, manager Vicente del Bosque failed to use Atletico Madrid's players to his advantage. More players from the league-winning team should have started in the World Cup matches, especially against Netherlands. If he had used players like Koke and Juanfran in the first game, perhaps there would have been better communication among his Atletico players (including Diego Costa). And while the Barcelona and Real Madrid players had already won the World Cup, the Atletico players had not; they would have been more hungry for success. Regardless of the cause, Spain's elimination was definitely a huge upset in the World Cup.

Russia's group-stage elimination was also an upset, not just in results, but also in the quality of their soccer. Fabio Capello, the highest-earning manager of the World Cup, failed to bring out the best in his team. He tried a defensive strategy where the Russian team would wait for the opposition to attack and then slowly build up and try to score. For most of their group matches, they seemed content with a draw. In the end, their boring approach led to their elimination. For a country with a soccer tradition extending back to the Soviet Era (especially the 1960s), Russia failed to impress soccer fans around the world.

A third upset struck England. Roy

Hodgson's team came into the tournament with a very young squad. This opened them to the possibility of losing early in the tournament, as their main goal was to have the young players gain experience. But a young team is no excuse for poor soccer. Given the considerable young talent, Roy Hodgson failed to make use of his player's strengths. In contrast, Jurgen Klinsmann managed to successfully couple experience with youth to bring out the best in his players.

The silly penalty call on Fred's flop in the opening game between Brazil and Croatia was a sign of mistakes to come.

Perhaps England is too dependent on Wayne Rooney, making him out to be a better player than he actually is. If Roy Hodgson had started with Ross Barkley in place of Rooney, England could have generated a bit more dynamism. Nevertheless, Rooney's goal and goal assist suggest that he may still have some role to play in this squad, but perhaps no longer as a star.

The worst part of the World Cup so far has been the referees. The silly penalty call on Fred's flop in the opening game between Brazil and Croatia was a sign of the mistakes to come. The game between Colombia and Brazil was subject to particularly terrible officiating. The referee failed to give out yellow cards in response to the many harsh tackles on James Rodriguez of Colombia. This led to an extremely physical match resulting in Neymar's gut-wrenching injury. If the referee had established his authority from the start, the players would not have been comfortable making such harsh and dangerous tackles.

Furthermore, Colombia's Mario Yepes' goal was wrongfully disallowed due to an offside call. I could go on listing the faults of the referees, but Colombia's Falcao tweeted the situation perfectly: "Next time we play, don't forget to call the refs because [they] didn't show up today." Indeed, his comment could describe the officiating of many of the matches in the tournament.

Stars of the World Cup

This World Cup has seen many goals scored, but the one of the biggest surprises has been the goalkeepers, of whom several have made headlines.

First among goalkeepers is Costa Rican Keylor Navas. He came into the tournament in form, having broken a clean sheet record at Spanish Levante and earned one of the highest saves-to-shots ratio in the major leagues. To those unaware of Keylor Navas' goalkeeping abilities, however, he showcased himself with some great saves that kept Costa Rica going until the penalty shootout in the quarterfinals. His reflexes are incredible, and following his performance in the World Cup, it won't be a surprise if he makes a jump from Levante to a more prominent European squad.

In second place comes Guillermo Ochoa. Ochoa came into the World Cup as a free agent, having concluded his run

at French side Ajaccio. In his last season with the club, he had conceded 71 goals but had memorable performances in some matches, including one in a 1-1 draw against Paris Saint-Germain. In Mexico's match with Brazil, the relatively unknown goalkeeper's dive to save Neymar's header was reminiscent of legendary goalkeeper Gordon Banks's dive to save a Pele header in the 1970 World Cup.

Through his several tremendous stops in other matches, what drew my attention was that his perfect positioning. In almost every save he made, he didn't have to move. Instead, the ball just bounced off his body or he saved the ball reflexively. Positioning is extremely important in goalkeeping, and Ochoa's skill was clearly evident.

Algerian Rais M'Bohli, Nigerian Vincent Enyeama, and American Tim Howard were also among the high-performing goalkeepers. Rais M'Bohli put up an amazing fight against Germany and surely made his name known around the world. Perhaps he'll manage to make a move from Bulgarian CSKA Sofia to a better team. Vincent Enyeama defended his goal well in the match against France. Tim Howard broke a record for most saves in a World Cup against Belgium. He also showed that he was a true leader as he urged his American side to not give up and attack in the match against Belgium. What more can you want from a goalie?

Although Manuel Neuer is already a well-known goalkeeper, this World Cup, he showed us how he could not only play goalkeeper, but also act like a sweeper. His heat map in the match against Algeria showed that he was quite active outside the box while still keeping his goal safe.

Apart from goalkeepers, the biggest stars of the World Cup so far have probably been James Rodriguez, Lionel Messi and Neymar.

The young Colombian James Rodriguez became the second-youngest player to reach six World Cup goals, after Pele. His six goals are the most scored by any player in the tournament so far, and he will probably win the golden boot. He also added two assists to his goal tallies to show that he can contribute to his team in more than one way.

When Colombia was eliminated, David Luiz was the first to console James Rodriguez, encouraging an entire stadium of Brazilians to give a standing ovation for the young star. Following his rise to prominence, Rodriguez has clubs lining up at Monaco's door to transfer him.

World Cups for Lionel Messi haven't always been so successful. For a player of his caliber, he was always expected to score plenty of goals and carry Argentina at least past the quarterfinal, but he failed to do so in 2006 and 2010. This year he is 27, the same age as Diego Maradona when he led Argentina to victory in Mexico in 1986. Messi has already brought Argentina to the semifinals, and his country is wondering if he will replicate Maradona's feat.

Even if he fails to do so, he has proved himself, playing a central role in almost all of his team's goals. This comes after a long season at Barcelona where he exhibited questionable performance.

Coming into the World Cup, host Brazil's hope rested in Neymar. How did Neymar respond? By scoring four goals and providing the energy Brazil needed to pull off the wins. It's sad to see him go down with a terrible injury. Now, Brazil will have even more reason to win the World Cup. Let's see if they can win the trophy for Neymar.

David Luiz has also been impressive. His remarkable strike against Colombia proved to be decisive, and he has been solid in the back as well. Arjen Robben has been invaluable for Netherlands. His relentless attacking and seemingly limitless energy have helped Netherlands through to the semifinals.

Memorable moments

I now ask you to think about what will stick with us once this World Cup is over: will the spectacular goals and missed opportunities or the moments off the pitch come to mind first? For me, it's definitely the latter. Whenever I think about the 2014 World Cup, I think about the video of Ghanaian star midfielder Sully Muntari handing out money to the people of the favelas. I think about the Greek national team asking that their World Cup bonuses go to building a new training facility. I think about Sporting Lisbon and Algeria star, Islam Slimani announcing that the Algerian national team's bonuses will be going to aid Palestinians as they struggle to live in barely human conditions in Gaza.

Given the considerable young talent, Roy Hodgson failed to make use of his players' strengths.

I think about the giant crowd that gathered to thank a Chilean squad that just missed their shot at the quarterfinals in a tight game with Brazil. I think about the Brazilians that gathered outside the hospital where Neymar was being held after breaking a vertebra. I think about the tears of French winger Mathieu Valbuena and Colombian star James Rodriguez as both their teams were eliminated in the quarterfinals. I think about David Luiz asking an entire stadium of Brazilians to give a standing ovation to James Rodriguez. I think about the hero's welcome Luis Suarez got as he returned to Uruguay as a martyr of FIFA's allegedly corrupt rule of soccer. I think about the Netherlands team making their way through the favelas and playing with the kids there.

It is not the goals scored or saved that I think about, but rather moments like these. These are the moments that make soccer or any other sport worth watching. At the end of the day, it is not the wins or the losses obtained, but the emotions we feel. Perhaps this is what the Champions League lacks. The World Cup reminded me once again that soccer is never just soccer, but something much more. That's why it will always have a special place in the hearts of soccer fans all around the world.





















































































































































































































































Costa Rica, Algeria, USA, Mexico, and Columbia deliver fierce performances in the group stage, advance past crowd favorites Spain and England for a chance to win

I believe the Champions League is the pinnacle of competitive soccer.

Perhaps in the past, when money wasn't as involved in soccer, the World Cup was more important. Of Didi, Pele, and Garrincha, the three key players of the legendary 1958 Brazil squad, only Didi played in Europe, in a stint with Real Madrid lasting only 19 games. If these players were playing today, they would probably come to Europe with record transfer fees, just as Neymar did when he moved to Barcelona. Since Latin American star players didn't play in Europe, the only way to watch them was at the World Cup every four years, making the World Cup perhaps the most prestigious tournament at the time.

Now, however, the Champions League is the stage for the best teams and players in the world. As the influence of money grows, the Champions League gets more and more spectacular. Every year, soccer fans get the chance to watch teams like Real Madrid, Barcelona, Paris Saint-Germain, and Bayern Munich give it their all to win the most important trophy in club soccer. The general consensus is that the players involved — and the soccer played — are better in the Champions League than in the World Cups.

I wasn't expecting anything special from the 2014 World Cup, anticipating it being even less fulfilling in all aspects than the Europa League. But as I watch the World Cup, it seems as if each team is out to prove me wrong. This World Cup somehow reminds me of something that the Champions League lacked. Perhaps

it's the plethora of emotions wrapped up in the World Cup's abundance of goals. Before we dive deeper into that though, let's take a look at the soccer played.

The World Cup had some surprises in store. Certain teams that no one thought had a chance shocked everyone with their results. Costa Rica is perhaps the first team that comes to mind. They made it to the quarterfinals for the first time in their history. As if their 3-1 comeback win against Uruguay was not enough, they managed to record a 1-0 win over Italy and a goalless tie with England. All three of Costa Rica's group-stage opponents had won the World Cup at least once, and yet it was Costa Rica that played the best soccer and showed fans everywhere that soccer is not always about the big names.

Under the leadership of star goalkeeper Keylor Navas and winger Bryan Ruiz, Costa Rica played just how they were supposed to. As they were the underdogs, the smart thing to do was to use five defenders, so they adopted a 5-4-1 formation and played it out successfully. With a bit more luck, their defense-focused tactics might have even paid off against Netherlands, but their fairytale ended when Louis van Gaal's surprising goalkeeper change for the penalty shootout got the best of them. Still, Costa Rica won over the hearts of many soccer fans all around the globe.

A second surprise was Algeria. In a group from which most people assumed Belgium and Russia would advance, Algeria stunned. They almost recorded a win against Belgium, then went on to devastate South Korea by scoring four goals, and then got the tie they needed against Russia

to advance. Algeria made good use of their stars who played in the Iberian leagues.

Valencia midfielder Sofiane Feghouli, Granada midfielder Yacine Brahimi and Sporting Lisbon striker Islam Slimani led Algeria to a historic round-of-16 match against Germany. In that game, their goalkeeper Rais M'Bohli took center stage as he pulled save after save to extend the match to extra time. Algeria's strong offense and goalkeeper helped Algeria draw fans from every corner of the world.

Mexico, despite being a staple of recent World Cups, was a surprise this year because they had barely qualified. With a terrible qualification campaign in a relatively weak CONCACAF, I thought Mexico would have no chance in a group with both Brazil and Croatia. But former Mexican player Miguel Herrera managed to surprise me with his team's great soccer. He employed a 3-5-2 on offense that converted to a 5-3-2 on defense. This three-defender formation paid off when his team made it past the group stage and almost eliminated Netherlands in the round of 16.

Giovanni dos Santos was the star of the offense, but left wing-back Miguel Layun and midfielder Hector Herrera were also key in Mexico's run. Of course, one cannot discuss Mexico without mentioning goalkeeper Guillermo Ochoa. His im-

probable saves surprised everyone, and quickly earned him a worldwide fan base. His stops against Brazil in the group stage gave Mexico a tie key to their second-place finish.

The United States surprised me as well. Jurgen Klinsmann had managed to bring out the best in his players, and the USA had a successful run despite lacking Landon Donovan. What surprised me more, though, was the interest in the World Cup that Americans mustered up. Who would have thought that major cities would have large viewing parties? The people of the USA have made it clear that they are interested in soccer, and now it is up to the national team and Major League Soccer to capitalize on this interest.

The final team I'd like to discuss is perhaps not a surprise. The Colombian national team was expected to make the World Cup run that the 1994 Colombian squad never did, but when Falcao got injured, many doubted the team's ability to advance without their star striker. Nevertheless, they managed to silence any doubts with their attack-minded soccer, which was as effective as it was fun to watch.

Under the leadership of young James Rodriguez, Colombia made it to the quarterfinals and put up a good fight against Brazil. The energy they brought to the tournament was unmatched. Watching them dance after every goal they scored was a joy. They had the air of a team that had come simply to have fun, nothing more and nothing less.

In general, this World Cup showcased a number of teams that played with three

FIFA, Page 11



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