

Weather Systems	Weather Fronts	Precipitation Symbols	Other Symbols								
H High Pressure	Trough	<table border="1"> <thead> <tr> <th>Snow</th> <th>Rain</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Snow	Rain							Fog Thunderstorm Haze
Snow	Rain										
L Low Pressure	Warm Front	Moderate ** ..	Compiled by MIT Meteorology Staff and <i>The Tech</i>								
S Hurricane	Cold Front Stationary Front	Heavy									

Goldman stock falls on worries over sustainable returns

By **Nathaniel Popper**
THE NEW YORK TIMES

Goldman Sachs on Thursday reported strong third-quarter results, but investors and analysts expressed concerns that the performance might not be sustainable over time.

Despite announcing profits that were up nearly 50 percent from those in the period a year earlier, the firm’s stock closed down more than 2.5 percent on Thursday.

After digesting the apparently positive numbers, some analysts and investors worried that a significant portion of the profits came from moves that are not likely to be replicated.

Goldman, for instance, sharply cut the amount of money it put aside to pay employees, leaving more room for profits.

And some of the biggest profits came from an investing division that is expected to deliver uneven results and shrink because of new regulations.

“It’s about visibility and sus-

tainability of returns,” said Steven Chubak, a bank analyst at Nomura Securities.

Goldman’s earnings rose to \$2.24 billion, or \$4.57 a share, compared with \$1.52 billion, or \$2.88 a share, in the period a year earlier.

Analysts polled by Thomson Reuters had expected the bank to earn \$3.21 a share.

The bank’s total net revenue rose 25 percent, to \$8.39 billion, far outpacing the \$7.8 billion anticipated by analysts.

“With respect to the longer-term outlook and our sense of positioning in the marketplace, we couldn’t be more pleased,” the firm’s chief financial officer, Harvey M. Schwartz, said on a conference call with analysts.

The most impressive results came from the bank’s so-called fixed-income trading desks, where bonds and derivatives are bought and sold.

Revenue also rose 74 percent from a sluggish quarter a year earlier.

But Goldman’s results in the

most recent quarter looked particularly good because they were being compared with the period a year earlier, which was one of the bank’s worst quarters in recent years.

Goldman’s performance relative to the second quarter of this year was less impressive, particularly when compared with that of its big competitors.

Revenue from fixed-income trading dropped from the second quarter, which is traditionally a stronger part of the year for Wall Street.

More important, the decline in Goldman’s fixed-income trading revenue from the second quarter was sharper than the drop at any of the other big banks that have reported results so far.

“I didn’t feel like their results were stellar relative to peers when using a market-share lens,” Chubak said.

The results still had many bright spots. Profit increased at every key division compared with the recorded results in the period a year earlier.

Hong Kong leader open to talks with protesters

By **Alan Wong**
THE NEW YORK TIMES

HONG KONG — Hong Kong’s leader said Thursday that the city government hoped to meet with student protest leaders as soon as possible, as authorities struggled to remove pro-democracy demonstrators who have occupied some of the city’s most important thoroughfares for nearly three weeks.

But Hong Kong’s chief executive, Leung Chun-ying, said he was in no position to offer concessions to the protesters who are demanding democratic elections, leaving unclear how he intends to resolve the territory’s worst political crisis since China regained sovereignty from Britain 17 years ago.

“First, we can’t make something unconstitutional constitutional,” he said, citing as an example the main demand by protesters to give voters the right to nominate his successor.

Leung said that it was Beijing,

and not he, who had the power to amend or overturn the Chinese national legislature’s framework for Hong Kong elections in 2017, which had angered democracy advocates.

In August, the Chinese legislature issued a proposal requiring that candidates for the post of Hong Kong chief executive be vetted by a group dominated by pro-Beijing interests. The decision led to a series of protests, student strikes and the “Occupy” demonstrations.

Leung said it was “not up to the Hong Kong government, but the central government” that the Chinese legislature would not retract its decision.

Last week, the Hong Kong government delayed the talks with student leaders over how far the electoral overhaul promised by Beijing could go.

Negotiations are further complicated by the authorities’ efforts to clear the protesters’ roadblocks

to reopen traffic. Early Wednesday, hundreds of protesters retaliated by blocking a road in front of the chief executive’s office.

A protester at that site was apparently beaten by several police officers for about four minutes, drawing a larger turnout Wednesday night.

Infuriated by the beating, which was shown on television, the protesters attempted to blockade more streets Thursday. Kong Man-keung, a senior police superintendent, told reporters on Thursday afternoon that seven police officers said to be involved in the beating had been identified and suspended. He said the alleged victim, Ken Tsang, resisted arrest after he poured an unidentified liquid on several police officers.

Tsang, who has been identified as a member of the pro-democracy Civic Party, is now facing charges of assaulting the police, unlawful assembly and obstructing the police, Kong said.

Calm returns to Wall Street, but Europe remains a worry

By **Peter Eavis**
THE NEW YORK TIMES

For a day at least, Wall Street was able to work through its worries about the world economy.

After Wednesday’s mayhem, stock markets around the world mostly stabilized Thursday. The Standard & Poor’s 500 benchmark of U.S. stocks recovered from an early slump to close ever so slightly higher, at 1,862.76. The Nasdaq composite index rose 2.97 points, or 0.05 percent, to 4,217.39, while the Dow Jones industrial average fell 24.50 points, or 0.15 percent, to 15,117.24.

Most European markets, which were hit particularly hard Wednesday, fell again, but ended up off their lows.

The yield on the 10-year Treasury climbed after dipping below the psychologically important 2 percent mark for the second consecutive day.

In recent years, investors have

piled into Treasurys during times of stress, so the small increase in the yield, to 2.15 percent, from 2.13 percent late Wednesday, was a sign that investors had shed some of their nerves. The price on the 10-year Treasury note fell 7/32, to 101 31/32.

As some calm settled on Wall Street, some executives wondered whether fears about the global economy — which prompted some of the frantic selling in recent days — might be overdone.

“In speaking with our economists only yesterday,” Harvey M. Schwartz, chief financial officer of Goldman Sachs, said on a conference call Thursday, “they would argue that nothing has fundamentally changed in the past two weeks, or certainly the last 24 hours, regarding the long-term outlook for the global economy.”

But it is not clear that the world’s biggest economies have enough momentum to please markets.

The exception might be the U.S.

economy. After a handful of uninspiring economic releases Wednesday, two strong ones came out Thursday, including a low number for people claiming unemployment benefits. In addition, James Bullard, the president of the Federal Reserve Bank of St. Louis, suggested that the Federal Reserve could consider delaying the end of its bond-buying stimulus program.

On Thursday, the European Union said that inflation in the 18 countries using the euro had fallen to 0.3 percent in September, its lowest level in five years. Spain, Italy and Greece actually had deflation. Falling prices are considered troubling because they can feed on themselves and deepen an economic malaise.

“Europe faces the risk of a prolonged period of substantially below-target inflation or outright deflation,” the U.S. Treasury Department warned Thursday in a semi-annual report to Congress.

FBI director calls ‘dark’ devices a hindrance to crime solving

WASHINGTON — The director of the FBI, James B. Comey, said Thursday that federal laws should be changed to require telecommunications companies to give law enforcement agencies access to the encrypted communications of individuals suspected of crimes.

In a speech at the Brookings Institution in Washington, Comey warned that crimes could go unsolved if law enforcement officers cannot gain access to information that technology companies like Apple and Google are protecting using increasingly sophisticated encryption technology.

“Unfortunately, the law hasn’t kept pace with technology, and this disconnect has created a significant public safety problem,” he said.

Comey said that he was hoping to spur Congress to update the Communications Assistance for Law Enforcement Act, a 1994 law that requires phone companies to build into their systems an ability to immediately begin wiretapping if presented with a court order.

Online services like Gmail or Facebook are not covered by that law. As people have increasingly communicated over the Internet instead of by phone, the FBI has been pushing since at least 2010 to expand the law so that they would be covered by the same mandate, warning that its ability to carry out wiretap orders is “going dark.”

One aspect of the FBI’s concern has been startup companies, many of which have not built intercept capabilities into their products. That can cause delays when they receive an order. For their part, the startups say that building in such capabilities is costly and could attract malicious hackers.

—*Michael S. Schmidt and Nicole Perlroth, The New York Times*

Serbia honors Putin while keeping an eye on ties to the West

PARIS — President Vladimir Putin of Russia arrived Thursday in Belgrade to commemorate the city’s liberation by the Red Army during World War II, in a visit that underlined Moscow’s growing attempt to assert its influence in the western Balkans, even as Serbia tries to link itself inextricably to the West without losing Russia’s support.

Snipers stood guard on rooftops and thousands of spectators chanted, “Putin! Putin!” as Putin was awarded the Order of the Republic — Serbia’s highest honor — by President Tomislav Nikolic at a military parade. It included a procession of 3,000 Serbian soldiers and air acrobatics by Serbian and Russian fighter jets.

As the West and Russia are caught in Cold-War-style tensions over Russia’s incursion into Ukraine, Serbia has tried to find a precarious balance, declining to join the West’s sanctions against Russia over Ukraine while vowing that it remains committed to joining a European Union that is seeking to shun Putin. The U.S. ambassador to Serbia was conspicuously absent from the ceremony.

Belgrade’s political schizophrenia was on display Thursday, along with a pomp and circumstance that Ivo Viskovic, a professor of political science at Belgrade University and former ambassador to Germany, said Belgrade had not witnessed since the heyday of the former Yugoslavia before the death of President Josip Broz Tito.

Addressing Putin, Nikolic pledged Serbia’s commitment to Russia, its longtime ally, while Prime Minister Alexander Vucic vowed that Serbia would not sway from its “European Union path.”

“Serbia will not compromise its morals with any kind of bad behavior towards Russia,” Nikolic was quoted as saying by B92, a leading Serbian broadcaster, after he and Putin laid wreaths at a memorial in Belgrade to Soviet soldiers.

—*Dan Bilefsky, The New York Times*

India’s prime minister announces reforms to increase job creation

MUMBAI, India — Prime Minister Narendra Modi announced labor reforms Thursday, simplifying employment rules and aiming to give a lift to manufacturing and job creation.

“For the success of ‘Make in India,’ ease of doing business should be given priority,” said Modi, who was elected on a platform of development and job creation.

Cumbersome labor regulations are among the biggest hurdles to setting up manufacturing in India, which fell to 134th place this year in a World Bank index of countries for doing business.

Modi said that there would be greater accountability in the inspections of businesses, which say inspectors with discretionary powers routinely harass them.

The Labor Ministry will also set up a website to allow companies to file a single report for compliance with 16 labor laws. Modi said those initiatives were in line with his government’s motto of “minimum government and maximum governance.”

At the same time, Modi emphasized that labor issues needed to be seen from the perspective of workers and not industrialists. He announced a program for skills development, in which the Labor Ministry will finance the first two years of training for apprentices in manufacturing units.

He also promised easier portability of payroll-financed pension savings when people change jobs and move between states by using a universal account number. Because of the difficulty of transferring money, about \$4.4 billion in such funds lies in inoperative accounts, where workers cannot obtain access.

“I want to return the money to those poor people,” Modi said.

The announcements were greeted positively by Indian business interests, which have been lobbying for a change in labor regulations.

“This is something industry would welcome very strongly and has been awaiting for a long time,” said Bidisha Ganguly, chief economist at the Confederation of Indian Industry.

—*Neha Thirani Bagri, The New York Times*

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GUEST COLUMN

How each of us can improve our communities

Through the tragedies of last several months, we have often been reminded that MIT is a community that cares, that help is always available, and that seeking help is a sign of strength. And it is true that MIT has many excellent resources. However, it is also true that so many continue to see MIT as a place without a safety net.

I appreciated “All Doors Open” as an effort for us to consider how we can do better as a community — because a community response is necessary. What follows are my reflections on how we can make MIT a more caring place. They come from my experiences as an MIT undergrad, graduate student, course instructor, and spouse; as a hallchair, GRT, and REF; as someone who has been with people facing rough times and lost someone close myself.

Learn to listen deeply. As engineers, we often jump to a solution, but for most challenging situations there is no quick fix. Instead, learn to take the time to let others speak without interruption or judgement, and learn to validate their experience by summarizing what they've said. For example, the next time someone tells you, "These n projects are driving me crazy!" try responding with something like, "It seems like it's a tough week." Give them the space

to keep talking rather than one-upping them with, "I understand, I have (n+1) projects!" Practice speaking authentically.

For students and faculty alike, complaining about work and sleep is one of MIT's most popular pastimes. But how many professors have you heard admit that they're having a tough time balancing work and family or that they feel inadequate when trying to help a troubled colleague or student? We put so much value

An open door is a kind gesture, but ultimately a passive one.

on our intellect that we are often afraid to admit that our minds may be troubled. As I discussed “All Doors Open” with the event’s participants, I was struck by how fleeting the truly deep moments were. Like any other skill, speaking authentically is challenging and requires practice. Faculty and senior graduate students, UROP advisors and upperclassmen: We are mentors whether we chose to be or not — we are the ones who must model healthy, authentic conversations.

Engage with those around you. An open door is a kind gesture, but ultimately a passive one. It does little if you haven't

made yourself approachable. We are a culture that usually won't interrupt someone with headphones or with a closed door — after all, they might be busy being brilliant! Let us change that. As a freshman, there were a group of upperclassmen who stopped by my door several times a week, every week, no matter how often I said I was too busy to hang out. Fourteen years later, I still feel that their “door” is truly open. Start modest — whether it's just a hello or an invitation to walk over to the coffee machine, make it a goal to engage with one person in your hall or lab space every week.

When I first arrived at MIT in 2001 as a budding engineer, I was frustrated that the administration couldn't "solve" our mental health crises. Now I appreciate the efforts of administrators, department heads, and faculty to become more sensitive to mental health issues. I also appreciate how many of these issues are endemic in our community. But the bad news — that we must change as a community to address these challenges — is also good news: it means that each of us truly have the power to make a difference in our dorms, our lab spaces, and our departments.

Finale Doshi-Velez is a member of the Class of 2005 as well as a former hall chair on Fourth East in East Campus.



A sub headline of an article in the Tuesday, Oct. 14 issue of *The Tech* about the MIT women's soccer team's win over Wheaton incorrectly refer to the team as the field hockey team.

OPINION POLICY

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Dissents are the signed opinions of editorial board members choosing to publish their disagreement with the editorial.

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Q.E.D.

LIFE AFTER GRADUATION OFTEN SEEMS OVERWHELMING



BUT LOOK AROUND - ALL YOUR FRIENDS ARE TRYING TO FIGURE OUT THEIR OWN LIVES, TOO



WE'RE ALL FINDING OUR OWN PATHS

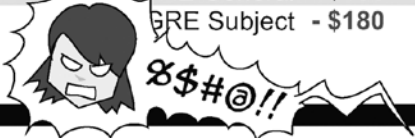
YOU ARE NOT ALONE IN YOUR JOURNEY



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UPPERCUT by Steve Sullivan

UGH. I WILL DEFINITELY NOT BE ABLE TO STAY AWAKE THROUGH ANOTHER LECTURE.

I FEEL BAD, THOUGH. MY NEXT PROFESSOR USUALLY DOES A PRETTY GOOD JOB.



I'VE BEEN THERE, MAN. DON'T WORRY, I'VE GOT JUST THE THING YOU NEED.

I'M NOT LETTING YOU DRAW PUPILS ON MY EYELIDS.

NO, NO! THIS IS WAY BETTER!



I'M NOT REALLY SURE HOW TO FEEL ABOUT THIS.

IT'S NOT YOUR FAULT I'M ASLEEP



STEVE SULLIVAN OCT. 2014

Debugging code @ Office Hours

JA

So I'm getting this error... "404 Error Not Found"



Hmmm. Have you tried pulling in latest changes

Yup

Adding random print statements?

Yup

Downgrading Java?

Yup

Using Vim?

lol no



Welll, what if we add another print statement here...

Error: Why are you taking this class?



Welp. I don't know, I'm Course 15.



What kind of error is "404 Error not found"?

Keep 'Em Closed by Lonnie Burton

Solution, page 9

- ACROSS**

1 Concert memento

5 Ill humor

11 Endorsed

14 Galileo hometown

15 Parisian "Wow!"

16 Part of RPM

17 OPEN AT YOUR OWN RISK!

19 Upsilon preceeder

20 Prone to fidgeting

21 Signaling to start

23 County Kerry town

26 Mideast capital

29 Corn product

30 Grey's Anatomy sets

32 Horse's father

33 Kidman's Oscar role

35 Major inconvenience

37 Half of MCII

40 OPEN AT YOUR OWN RISK!

43 Did nothing

44 Tree-trimming time

45 Cook at a luau

47 Pie holders

49 Anatomical pouch
- 51 Rightful

52 Frequent mall anchor tenant

56 Melodrama stock character

58 Mountainous Missouri county

59 Gas in the stratosphere

61 After all expenses

62 OPEN AT YOUR OWN RISK!

68 Pretense

69 Cling (to)

70 Person on your side

71 Self-effacing

72 Texas State Fair locale

73 Red Sea port
- DOWN**

1 Facility with saunas

2 Idiosyncrasy

3 Graceland network

4 Not very original

5 Diminuendo, to a musician

6 Heavy blows

7 Chaplin contemporary

8 Corn product

9 Tree in many street names
- 10 Sponsor of speedy spectacles

11 Of vision

12 Sandra's Speed costar

13 Clinical-trial concerns

18 Single-edition mag

22 Comfortable with

23 Wrecker's service

24 Barrels of laughs

25 Word on Hawaii's license plates

27 Digressive comments

28 Flash Gordon foe

31 Half of a couple

34 Uncommon writing of late

36 MSN rival

38 Takes charge

39 Mooted point

41 Spacek's Oscar role

42 Deep secrets

46 Business-card abbr.

48 Rubber-stamp refresher

50 Is wild about

52 Dr. Salk

53 From Brno

1	2	3	4		5	6	7	8	9	10		11	12	13
14					15							16		
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52	53	54						55	56		57			
58							59	60						
61					62	63	64					65	66	67
68					69							70		
71					72							73		

- 54 Burger serving

55 Tyrolean tune

57 Road Runner cartoon scenery

60 Author __ Neale Hurston
- 63 Tooth fillers' grp.

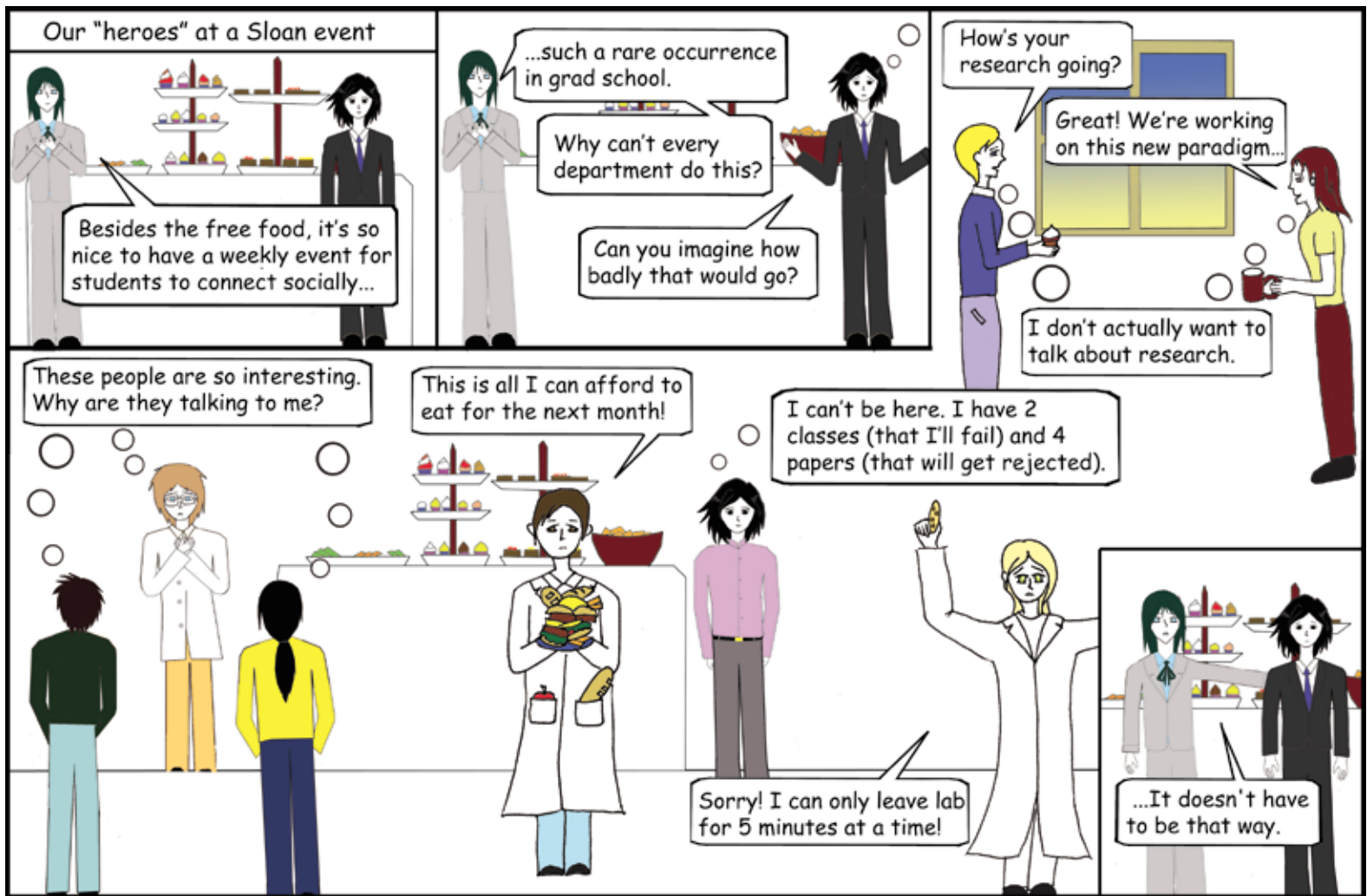
64 Ice-sport org.

65 __-ray player

66 World Cup cheer

67 Thumb-index tab, perhaps

IFUNFUNFUNFUNFUNFUNFUN



Outcomes
That Matter



Solution, page 9

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

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 9

30x	480x		6x	
	12x		120x	1
4+			5+	
	6x		480x	
48x				2-
	30x			

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.

Melissa Renée Schumacher
STAFF PHOTOGRAPHER

It's not easy to see the night sky through Boston's severe light pollution. But the camera can often see more of it than the human eye. On the night I took this photo (Oct. 6), I'd actually tried take a picture of the Milky Way from the edge of the Charles River. It should seem ludicrously impossible to photograph the Milky Way from anywhere remotely near a city, but it can actually be done with enough work in post-processing.

Anyway, that didn't work because this close to Boston, the light pollution is too bad even for that technique. But another way we can use cameras to see more of the night sky is to combine many pictures into one to make a single time-lapse. This photo is really 80 separate photos, taken over a period of almost an hour. It's really easy to do this kind of thing if your camera has an interval timer setting. I set mine to take one photo every 40 seconds. The shutter speed for each one was 30 seconds, in order to get as much light from the stars as possible. A low ISO — in this case 200 — can help you get more detail in the stars, such as their color. Here all the stars seem about the same color, but in a less light-polluted location you would really be able to see how different they are from each other.

I set up this shot by the Green Building so it would look almost like the building was photobombing the stars. And the big sphere on top of it looks a little like an alien spaceship or observatory, which fits with the whole star theme. The streaks that don't look like stars are airplanes.

Aperture:
f/3.5

Exposure Time:
30 sec. for each
exposure

Sensitivity:
ISO 200

Effective Focal Length:
18 mm

vs

vs

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Have a burning desire to see these teams battle it out? In person?!

Join The Tech!

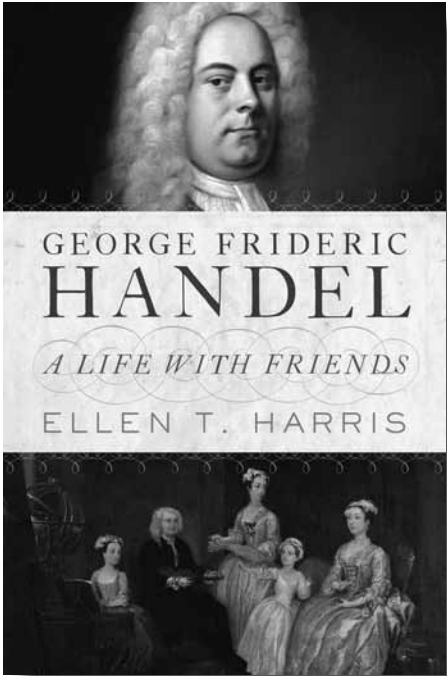
sports@tech.mit.edu

authors@mit presents:

Ellen T. Harris

Professor Emeritus, Music & Theater Arts

GEORGE
FRIDERIC
HANDEL
A Life with Friends



Wednesday, October 22nd, 5:30pm
Lewis Music Library, 160 Memorial Drive



© Bryce Vickmark

Please join us as we welcome Ellen Harris, former Class of 1949 Professor of Music at MIT, and celebrate the publication of her latest book, an intimate investigation of the life and work of the Baroque composer George Frideric Handel.

Ellen T. Harris is professor emeritus at MIT. She is an internationally recognized scholar in Baroque opera and a performing soprano.

George Frideric Handel: A Life with Friends is published by W. W. Norton & Company.

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Students applaud grad housing plan

Grad leaders say Kendall proposal reflects years of student feedback

East campus plans, from Page 1

Provost Martin A. Schmidt '88 wrote in a July letter that new housing would be built before Eastgate was torn down. "We anticipate that the new housing will not only replace the Eastgate housing but add more capacity," he said. Schmidt has also reaffirmed promises to look into housing opportunities on the west side of campus.

The Graduate Student Housing Working Group recommended in May that MIT provide 500 to 600 more beds for graduate students.

Sara Pixton, one of this year's new Eastgate presidents, said that previous assurances had been vague, and that she was "relieved" at the news from the provost over the summer.

Clark Pixton G, the other president of Eastgate, said that he, Sara, and their twin daughters had few nearby housing options other than those provided by MIT.

"We're very price sensitive," he said. "We were looking for at least a two-bedroom place, and everything else would be at least \$200 a month more expensive, and that's the very low end of what else is in Cambridge."

"We, for example, did not make it into the first- or second-round

lotteries, and we had to wait until almost the end of the summer [to find out] that we had made it into Eastgate," he added.

Clark Pixton said he was hopeful about the changes to east campus but wanted to make sure that graduate students' voices were heard.

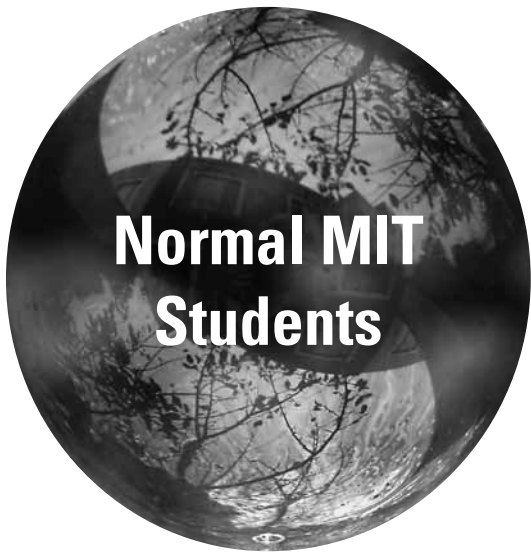
Marzyeh Ghassemi G, a former co-chair of the Graduate Student Council's Housing Community Activities committee, also said she was optimistic about the process after the provost's announcements, but wanted more detailed assurances, especially with regard to accommodations for families.

For Brian Spatocco G, the 2012-2013 president of the Graduate Student Council, the provost's announcements are a vindication of years of work by students and faculty to pressure MIT to pay attention to graduate housing.

"I distinctly recall a meeting with a very high-level administrator [who said] 'no, we're not doing graduate housing,'" Spatocco said of his early efforts. "We were flabbergasted." Later, graduate students would bring their concerns directly to Cambridge city officials.

"There's a lot of things that are in this plan that wouldn't be here had the students not spoken up," he said.

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Some Chinese MIT students find fault with demonstrators

Political science professor believes protests will have ‘lasting impact’

Hong Kong, from Page 1

“Candles in the Commons isn’t about saying the pro-democracy movement is right or wrong,” Cheung said. “We’re just asking that the students be allowed to protest safely.”

These same concerns about safety seem to have other students questioning the wisdom of the protests.

“The protesters should find more peaceful ways to show the government what they think,” one MIT undergraduate from mainland China said. “Using violence to occupy public space and blocking other citizens’ access to the area just isn’t right.”

A graduate student at the Sloan business school, who also wished to remain anonymous, worries that the protesters may become irrational and disruptive. He said that “the students are very young, many just in high school, and thus they aren’t necessarily thinking about the big picture, such as how the protests are disrupting life for other Hong Kongese.”

However, not everyone shares the same concerns. Lizhou Sha ’18, who is also from mainland China, said that “a protest wouldn’t be a protest if it didn’t cause some disruption. If the students want their voices heard, they first have to be noticed.”

Lawrence Lai, a Hong Kongese graduate student, said that if he were in Hong Kong he would have joined the demonstrations.

“The Occupy movement isn’t ideal, but now that it’s been set in motion, joining the cause is the best thing to do,” Lai said. “Those who are protesting for democracy have the interests of Hong Kong as a whole in mind, even if they are causing some disruption.”

With the protests now beginning to die down, some question whether they will have much of an impact. M. Taylor Fravel, a political science professor at MIT, believes the demonstrations have been influential.

“Within Hong Kong, this movement will definitely have a lasting impact,” he said. “Beijing has a better understanding of what the people want, and the people of Hong Kong have more confidence in their power. It will be interesting to see if there are more demonstrations going forward.”

Although the number of protesters has dwindled, a core group of demonstrators remain. Early Thursday morning, tensions escalated as pro-democracy protesters clashed with authorities. According to Reuters, Hong Kong police employed force to disperse the protesters, using pepper spray to stop demonstrators from blocking a major road.

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Solution to Starry Sudoku

from page 7

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

Solution to Twinkling Techdoku

from page 7

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

Solution to Crossword

from page 5

S	T	U	B	S	P	L	E	E	N	O	K	D
P	I	S	A	O	O	L	A	L	A	P	E	R
A	C	A	N	O	F	W	O	R	M	S	T	A
	A	N	T	S	Y		C	U	I	N	G	
T	R	A	L	E	E	D	A	M	A	S	C	U
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W	O	O	L	F	P	A	I	N		D	L	I
T	H	E	F	L	O	O	D	G	A	T	E	S
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	T	I	N	S		S	A	C		D	U	E
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Kath, Course 2	Jess, Course 9	Leon, Course 18
Esme, Course 3	Joyce, Course 10	Jack, Course 19
Dohyun, Course 4	Vince, Course 12	Tushar, Course 20
Vivian, Course 5	Anthony, Course 14	Stephen, 21/CMS
Austin, Course 6	Maggie, Course 15	Keith, Course 22
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MIT alumnus wins Nobel Prize in economic science

Jean Tirole honored for his theoretical, but applicable research on imperfect markets

By **Binyamin Appelbaum**
THE NEW YORK TIMES

WASHINGTON — The French economist Jean Tirole PhD '81, a student of imperfect markets, has spent decades dissecting the many industries where competition does not fulfill the textbook promise that prices will be low and quality will be high.

Tirole's work has helped governments to improve cable television service, to restrict credit card fees and to crack down on harmful monopolies.

And on Monday, it won him the Nobel Memorial Prize in Economic Science.

Tirole's work has clarified "what sort of regulations do we want to put in place so large and mighty firms will act in society's interest," Tore Ellingsen, the chairman of the selection committee, said after the announcement ceremony.

The choice of Tirole, a professor at the Toulouse School of Economics, comes after the 2008 financial crisis revealed shortcomings in the regulation of banks and other financial firms, and with increasing scrutiny, particularly in Europe, about the market power of technology companies like Google and Apple.

It is also the second consecutive year that the committee has honored an economist whose work essentially assumes that markets are often inefficient, challenging a widely held view in academia long associated with the University of Chicago economics department.

"Jean Tirole, along with others, established a good theoretical foundation for the non-Chicago view of things that markets fail in various ways," said John Kwoka, a professor of economics at Northeastern University in Boston who specializes in competition and regulation. "It's important to think hard about the reasons that they fail and it's

important to think hard about the consequences."

Monopolies or a few companies dominate many markets. They hold the power to keep prices artificially high, and they often lack incentives to innovate or improve quality. Cable and electric companies are ready examples in the United States.

Economists have long recognized that government regulation of such markets could produce better outcomes for society. Tirole, 61, is a pioneer in the application of mathematics, including game theory, to devising those rules. His work is largely theoretical, yet it has translated easily to practical use.

His work is also wide ranging. A description of his influence published by the prize committee cited more than 60 papers, an unusually large number.

He applied a set of general principles to the circumstances of each industry to suggest policies.

Tirole's achievement was in "writing prolifically, thinking creatively, covering a lot of territory and adding important nuance in a lot of areas," said Lawrence J. White, a professor of economics at New York University.

His work, beginning in the 1980s, was in part a response to the need for new rules as governments in Europe divested state monopolies, seeking to encourage investment and innovation while preventing predatory profit margins.

Tirole did not offer a single set of new rules. Rather, he applied a set of general principles to the circumstances of each industry to suggest appropriate policies, often reflecting a nuanced balancing of costs

and benefits.

Joshua Gans, an economist at the University of Toronto, compared Tirole with Louis Pasteur as the rare example of a laureate whose work has both advanced the theoretical understanding of economics and directly affected daily life.

Gans pointed in particular to Tirole's work on the deregulation of communications networks. Homes are generally connected to networks by a single line, owned by a single company. Governments seeking to foster competition can make that company sell access to its rivals. But the price is crucial. Too high, and consumers will see little competition. Too low, and the company itself will be unable to serve customers at a profit. In effect, if a company sells both iron and goods made from iron, the question is how much it should charge for the iron.

The pricing model developed by Tirole and a now-deceased collaborator, Jean-Jacques Laffont, is the basis of current law in Europe, New Zealand, Australia and other countries. But not in the United States. Gans said the difference explained why consumers in those other countries generally enjoyed lower prices and better service.

"The alternative is what happens in the U.S. where Comcast doesn't give access to its competitors so Time Warner has to decide whether to build over the top of Comcast or just to stay out of their markets," Gans said. "Had there been access regulation, maybe Time Warner and Comcast would be competing more directly."

The United States has taken Tirole's work on antitrust enforcement more seriously. Beginning in the 1970s, many courts and regulators rejected the idea that companies could increase market power by purchasing their suppliers. A car company couldn't squeeze consumers by buying a parts maker, the theory went, because it still would

face the same competition from other carmakers.

Tirole's work "successfully challenged" this view, the Nobel Prize committee said Monday. He brought together evidence that such deals could have negative consequences and articulated a unifying theory that has proved influential.

'We owe Jean Tirole so much'
Joaquin Almunia
EUROPEAN COMMISSIONER FOR COMPETITION

"So now, when there is a major merger that involves important vertical relationships, the authorities take a more nuanced view," said White, who served as chief economist of the antitrust division of the Justice Department in the early 1980s. "And we have Tirole in part to thank."

White said a recent example came in 2011, when the government conditioned Comcast's acquisition of NBCUniversal on the terms of a deal that made NBCUniversal's content available to Comcast's rivals.

Tirole's work also served as the basis for the European Union's regulation of credit card interchange fees, and it has informed investigations by European regulators of the pricing policies of technology companies.

"We owe Jean Tirole so much," Joaquín Almunia, the European commissioner for competition, said in a statement Monday. Almunia has pressed investigations of Google's market power, and of bank pricing practices.

Tirole, however, has not always been an advocate of regulation. When Washington sued Visa and MasterCard in 1998 for preventing banks from issuing American Express cards, the companies cited

Tirole's work as showing that such membership rules were beneficial. More recently he has defended "patent pools," where owners of related patents bundle their work.

Tirole received a doctorate in economics from the Massachusetts Institute of Technology in 1981, and he taught at MIT for eight years before returning to France in the early 1990s. The economics school at Toulouse, which he helped found, is now a leading center for the study of regulation.

He was far ahead of most economists in advocating for increased financial regulation, including early work supporting easy access to funding for financial institutions during crises.

In an interview broadcast Monday during the awards announcement, Tirole applauded recent efforts to impose liquidity regulations on financial companies, but warned that "banking is a very hard thing to regulate."

Tirole said regulators needed to pay attention to the linkages between regulated financial firms like banks and unregulated financial companies.

"That is something we had forgotten or ignored before the crisis," he said.

Tirole also said that a more "global stance" was needed to regulate industries that increasingly operate around the world, including actions to limit climate change.

The economics prize is the newest Nobel, created in 1969 to celebrate the 300th anniversary of the Bank of Sweden, the world's first central bank. It is the first time since 1999 an American did not number among the winners.

On the Nobel Prize website, Tirole said, in a recorded interview, that he had asked his 90-year-old mother to sit down before sharing the news.

He said he himself had needed about 30 minutes to recover.

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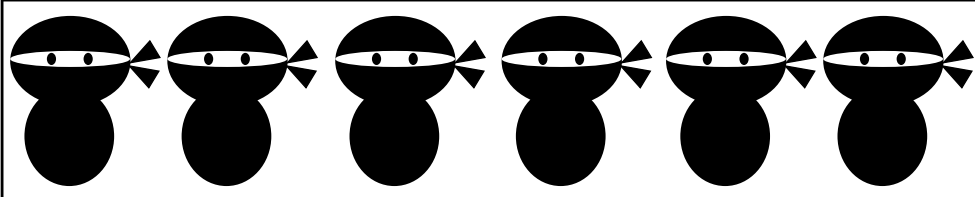
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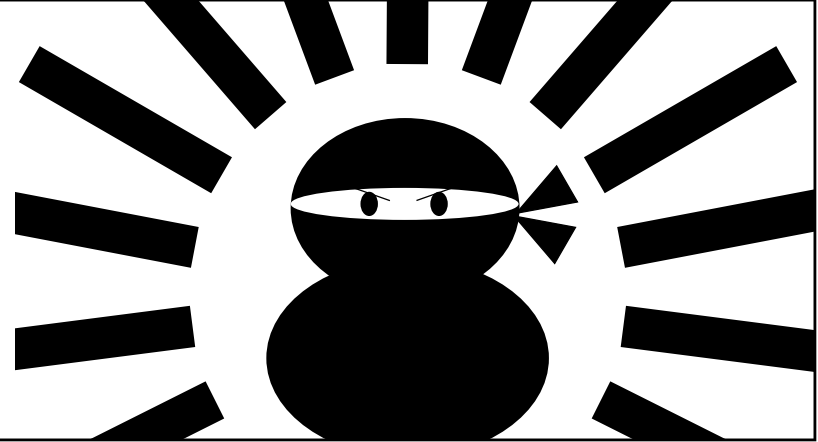


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Rifle comes up short

Engineers place third in their season opener, home opener is this Saturday

Opening the season on the road, the MIT rifle team traveled to West Point, New York to take on teams from the U.S. Military Academy and the University of Memphis. In the end the Black Knights won the three-way competition with a score of 4,632, with the Tigers a close second with 4,626 points and the Engineers third with 4,418.

Sarah N. Wright '16 led MIT in the smallbore portion of the match firing a 572, including a perfect score of 100 in her second round from the prone position, that placed her 10th overall in the match. Josh Martin of Army led all competitors with a 580, with Memphis taking the team title by edging out the Black Knights by a point with 2,293.

MIT totaled a 2,182 in smallbore with

Jia Yi Goh '17 finishing second on the team with a 553. Kelly J. Mathesius '17 totaled a 536 for the Engineers, with Helen Liu '16 adding a 521 and Abra H. Shen '16 finishing with a 517.

In air rifle Goh had all of her rounds reach at least 95 as she finished with a team-high 575 to finish in a tie for 12th overall with Makeannon Doran of Memphis. The Tigers' Beth Lee had the top score, an impressive 593, with Army winning the team battle with a 2,340, followed by Memphis with 2,333 and MIT with 2,236.

Wright was second in air rifle for the Engineers, posting a 567. Mathesius added a 550 while sophomore Kevin Ng (Coral Springs, Fla.) turned in a 544. Shen completed the scoring for MIT with her round of 536.

MIT will make its home debut for 2014-15 on Saturday when it hosts John Jay College and the Wentworth Institute of Technology.

MIT takes down Wellesley

Field hockey team improves to 9-3-2 overall and 5-0-1 in conference after 3-0 shutout

Three different MIT players located the back of the Wellesley College net in the second half of Tuesday's New England Women's and Men's Athletics Conference (NEW-MAC) match as the Engineers defeated the Blue, 3-0, at Roberts Field at Steinbrenner Stadium. With the win, MIT improves to 9-3-2 overall and 5-0-1 in conference play, while Wellesley falls to 7-6-2 and 1-4-0.

Following a scoreless first half, Olivia M. Struckman '18 converted on Tech's third shot of the second half after receiving a pass from Ambika K. Krishnamachar '15. Struckman collected the pass on the far side and fired home her seventh goal of the season at 51:47. MIT doubled their advantage roughly five minutes later when Ashley J. Peter '15 located Morgan K. Moroi '16, who drilled a shot from the far side of the field, which curved past Wellesley junior goalkeeper Kat Goldsmith and landed in

the middle of the cage for her fifth goal of the season.

Anjali M. Krishnamachar '17 sealed the win for the hosts with her initial goal of the season at 80:02 when she pounced on a rebound following a shot by Peter. Krishnamachar collected the loose ball that bounced off a diving Goldsmith and sailed her only shot of the contest into the Wellesley net. Wellesley attempted to stop the three-goal run with a header in the box by Rianna Aylward '17 that sailed wide of the far post at 85:10.

MIT outshot Wellesley, 16-4, and held an advantage in corners, four to two. Lauren S. Ullmann '17, who started the game in net for MIT, recorded just one save, while Hannah M. Zlotnick '17, who played the final 25 minutes, registered two stops. Wellesley senior goalkeeper Claire Cerda played the first half for the Blue, but did not record a single save, while Goldsmith, who played the entire second half, turned away three shots.

Both teams return to action on Saturday, Oct. 18 at 1 p.m. as MIT hosts Smith College, while Wellesley entertains WPI.

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Morgan K. Moroi '16 shoots what would be the second goal of a 3-0 shutout of Wellesley College on Tuesday afternoon. All three goals were scored in the second half by three different players to help bring MIT's winning streak to five games.

ALEXANDER C. BOST—THE TECH

UPCOMING HOME
EVENTS

Friday, October 17

Women's Volleyball vs. Oneda St.
6 p.m., Rockwell Cage

Saturday, October 18

Sailing vs. Firefly and FJ Invite
9:30 a.m., Charles River

Rifle vs. John Jay 8 a.m., DuPont Rifle Range

Rifle vs. Wentworth 8 a.m., DuPont Rifle Range

Women's Openweight Crew vs. Head of the Charles
2:23 p.m., Charles River

Women's Volleyball vs. Colby College
10:30 a.m., Rockwell Cage

Women's Volleyball vs. Western New England University
1 p.m., Rockwell Cage

Women's Soccer vs. Smith College
1 p.m., Briggs Field

Men's Soccer vs. Clark University
1 p.m., Steinbrenner Stadium

Sunday, October 18

Sailing vs. Firefly and FJ Invite
9:30 a.m., Charles River

Women's Openweight Crew vs. Head of the Charles
2:18 p.m., Charles River

Women's Lightweight Crew vs. Head of the Charles
3:31 p.m., Charles River

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