



MIT mourns loss of Cara Anne Nickolaus

Gathering held in Lobby 10 after economics graduate student's death

By William Navarre
NEWS EDITOR

Cara Anne Nickolaus, a third-year economics graduate student, “died suddenly” Sunday morning, President L. Rafael Reif wrote in an email to campus on Monday.

In a separate email, Department of Economics chair Whitney Newey told students in the department that “[w]e understand it was a suicide.”

“We turn our thoughts to Cara’s family and friends as they absorb this extremely painful loss,” Reif

wrote. “In such moments, comfort can come from reaching out to those around us. Please do so.”

Nickolaus, who hails from Lincoln, Nebraska, was a top student at Washington University in St. Louis. The “best student I’d ever seen,” the author of a recommendation letter said of her, according to her advisor, Professor Parag Pathak. During her undergraduate years, she also played the oboe in the school orchestra.

At MIT, she was interested in studying the “mathematical aspect of microeconomics,” Pathak said. In

particular, she studied mathematical models of the way children from urban areas entered into schools.

“She was a beautiful person; she had a beautiful mind,” Pathak said. “She was always very compassionate.”

Nickolaus lived in The Warehouse (NW30) and served as the dorm’s treasurer and as a residential advisor.

“Cara was unbelievably bright, compassionate, and energetic,” dorm co-presidents Sami Khan G and Joy E. Louveau G said in a state-

ment. “She was a vital member of the Warehouse community and we will miss her dearly.”

At a community gathering held in Lobby 10 Monday, Reif said that Nickolaus often looked for “new ways to help others.”

“These aspects of her character only makes her loss harder to grasp,” he said.

After the gathering, staff from Student Support Services, Graduate Personal Services, and MIT



Nickolaus, Page 13
Cara Anne Nickolaus, 1990–2015

Talk series is launched to humanize professors

Initiative expected to draw students, faculty together in more ‘balanced’ relationships

By Mengyuan Sun

MIT Faculty Talks, a series of chats intended to build a closer relationship between students and faculty, launched last Wednesday, Sept. 16. The joint effort between the chancellor’s office and Lorna Gibson, a professor of materials science and engineering, opened with a presentation on “teaching, scholarship, and the imposter syndrome” by Arthur Bahr, a medieval literature professor.

Initially, Gibson started offering her faculty talk as an informal end-of-class lecture on how her family, interests, and values led her first to Cambridge, to industry, and then to MIT. Since then, other faculty have joined in, welcoming a chance to connect with their students. Gibson intends to create a space that encourages not so much the firehose-sponge dynamic between professors and students in lectures but rather a more balanced and humanistic one where students see other sides of the people that they spend so many hours with.

Bahr’s faculty talk, which will be

available online at a later date, offered candid insight into both the struggles and joys of academic life. He compared his experiences as a figure skater and free skater in his youth to his current roles as teacher and researcher at MIT.

For Bahr, figure-skating is the art of drawing and tracing geometric figures onto ice, and just as it is difficult, laborious, and solitary — albeit rewarding at times — research in medieval literature is also difficult, laborious, and solitary. Free-skating, on the other hand, came naturally to Bahr, as did teaching.

At the age of twelve he spent his free time playing “school” with his younger sister. The miracles of teaching, in his opinion, are that one, everyone can be together in a greater flow of thought, and two, people’s lives may change for the better. However, it was difficult to reconcile his love for teaching with a job in an institution that values research more. “I felt like a cat person in a dog person world,” Bahr said.

Bahr, like many students, strug-

Talks, Page 16

Ig Nobels recognize silly science

Research on urination rates, fake chicken tails is honored

By Divya Gopinath

There is no such thing as bad science — or at least that’s the general theme of the Ig Nobels. Every year, Nobel laureates convene at Harvard’s Sanders Theatre to award ten lucky groups Ig Nobel awards, consisting of “ten trillion Zimbabwean dollars” and a potted plant. And all they had to do was come up with some of the strangest scientific results.

Organized by the science hu-

mor magazine *Annals of Improbable Research*, the Ig Nobels honors findings that “make people LAUGH and then THINK,” to quote their slogan. Ig Nobel laureates, or “Ig-nitiaries,” are lauded for their crazy and often unexpected results. Past winners include a team that was able to levitate a frog using magnets and a biologist who established the efficacy of soda as a spermicide. There are ten categories in which one can win an Ig: chemistry, physics, biology, literature, manage-

ment, economics, medicine, mathematics, diagnostic medicine, and physiology/entomology.

Winners from this year performed research ranging from the somewhat-useful (developing a way to harness mechanical energy and unboil the whites of an egg) to the incredibly pointless (attaching a tail to a chicken so it walks in a fashion that mimics a dinosaur).

Patricia Wang and her team

Ig Nobels, Page 9

Prominent activists call on MIT to sell fossil fuel stocks in open letter

Activists from Fossil Free MIT have acquired signatures from various personalities, including actor Mark Ruffalo and professors Noam Chomsky and Junot Díaz, on an open letter addressed to President L. Rafael Reif calling on MIT to divest.

The open letter, released last week, was also signed by Stephen Heintz, President of the Rockefeller Brothers Fund, Bill McKibben,

founder of the environmental activist group 350, Columbia University climatologist James Hansen, and MIT graduate and Zipcar founder Robin Chase SM ’86.

“MIT has a unique obligation to stand up for science by also divesting from those who undermine the principles of scientific inquiry and thereby threaten MIT’s own integrity,” the letter says.

In June, a climate change committee appointed by Reif delivered its report. Three-quarters of the committee supported divesting from coal and tar sands, among several other recommendations. The report was open for comment during the summer, and MIT is due to announce its plans to address climate change sometime this semester.

—Anshuman Pandey



U.S. Secretary of Commerce Penny Pritzker and MIT President Reif discuss the importance of harnessing the power of data, pointing out that research, education, and policy regarding data are crucial to the American economy.

U.S. Secretary of Commerce visits the Institute

U.S. Secretary of Commerce Penny Pritzker toured MIT’s campus and delivered a speech on Sept. 18 at the Koch Institute for Integrative Cancer Research. Her address was followed by a Q&A session with President L. Rafael Reif, in which they discussed the challenges in academic research when long-term projects are only backed by short-term investments.

During the Q&A, Reif indicated that although private investments are generally a sufficient supplement to public funding in research done at academic institutions, these

investments are more readily acquired when the project in question has a five-year timeline, at most. This presents a problem for innovation that requires more time to be developed.

According to the MIT News Office, Pritzker’s visit is part of the Obama administration’s efforts to support U.S. growth in advanced manufacturing. Her visit also included “a tour of three research groups in MIT’s Research Laboratory for Electronics (RLE) [and] a roundtable discussion about innovation ecosystems with MIT faculty and other stakeholders.”

—Patricia Z. Dominguez

IN SHORT

This week is Career Week; Career Fair is this Friday! Remember to register online at career-fair@mit.edu to attend and print your name badge in the Student Center today or tomorrow any time between 10 a.m. to 4 p.m.

MIT Community Blood Drives will be held all week. Come donate at La Sala on the second floor of the Student Center. Hours today are 8 a.m. to 1 p.m.

DormCon will be holding a special election for the secretary position on Thursday at 7:30 p.m. If you are interested in running, email dormcon-exceest@mit.edu.

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

SMBC CREATOR GRACES CAMPUS
Hilarity and nonsense at BAHFest. **ARTS, p. 14**

JOHNNY DEPP IN BLACK MASS
A film exploring crime, bureaucracy, and ambition — does it succeed? **ARTS, p. 14**

WILL DOCTOR WHO DELIVER?
If answers aren’t forthcoming, I’ll be retroactively unimpressed. **ARTS, p. 15**



HACKERS GONNA HACK
(And nap.)
PHOTO, p. 10-11

SPORTS BLITZ
The women’s tennis team’s 9-0 victory, and other MIT sports news from this week.
SPORTS, p. 18

SECTIONS
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Did you get a 31 or better on the ACT?

Did you get a 700 or better on the Math Portion of the SAT?

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WEATHER

Seasonable temperatures return

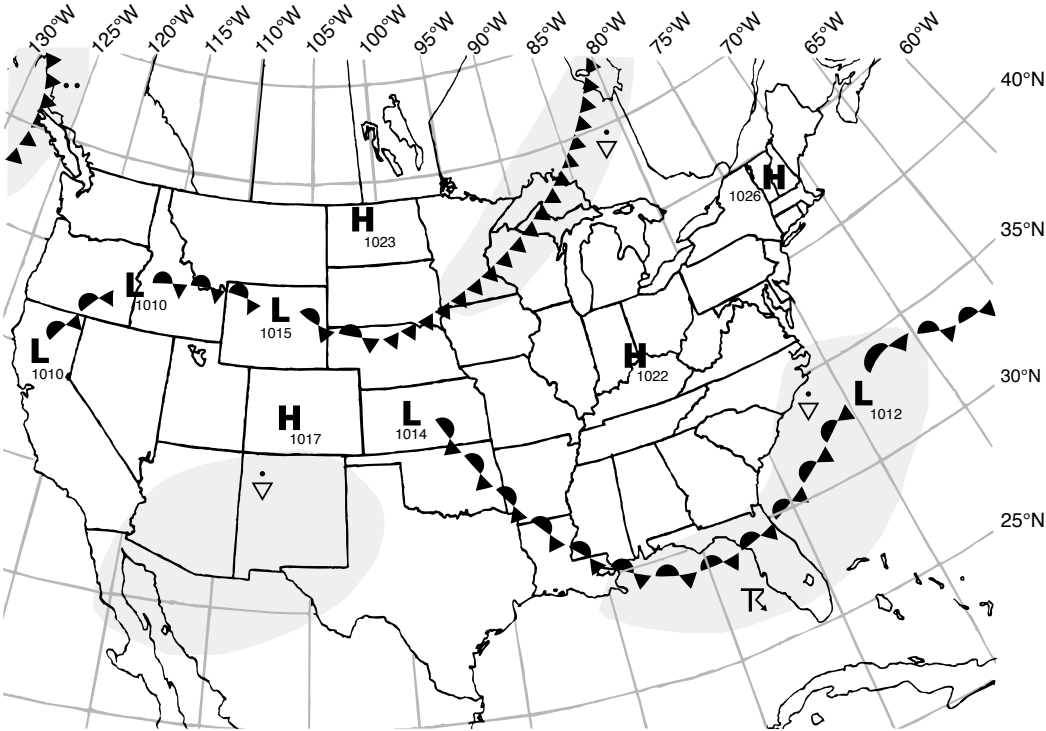
By Vince Agard
STAFF METEOROLOGIST

Just in time for the autumnal equinox, the first hints of fall have arrived in the form of cooler weather. After last week's unseasonably warm weather, a cold front passed through the Boston area on Sunday morning, bringing with it a cool northwesterly breeze. This breeze has ushered in a colder Canadian air mass that has brought temperatures down to around their normal levels. For this time of year, the normal high temperature is 70°F (21°C), while the normal low is 55°F (13°C). Indeed, the highs and lows for the next few days will be very close to those marks,

as a strong high pressure system settles in over the northern East Coast. The high pressure will make for relatively calm weather, with no precipitation expected for the remainder of the week. While onshore flow will result in considerable cloudiness today, sunshine will return in time for the first day of astronomical autumn tomorrow (the equinox occurs at 4:21 AM). This week's particularly pleasant pattern stands in stark contrast to the weather of this day on 1938, when the Great New England Hurricane struck Massachusetts with 87 mph winds, causing the deaths of over 600 people.

Extended Forecast

Today: Cloudy, high 68°F (20°C). Winds E at 5-10 mph.
Tonight: Clearing late, low 54°F (12°C). Winds light and variable.
Tomorrow: Sunny, high 75°F (24°C). Winds N at 5-10 mph.
Thursday: Sunny, highs around 70°F (21°C).
Friday: Sunny, highs around 70°F (21°C).



Situation for Noon Eastern Time, Tuesday, September 22, 2015

Weather Systems	Weather Fronts	Precipitation Symbols	Other Symbols
H High Pressure	Trough	Snow	Fog
L Low Pressure	Warm Front	Rain	Thunderstorm
Hurricane	Cold Front	Light	Haze
	Stationary Front	Moderate	Compiled by MIT Meteorology Staff and The Tech
		Heavy	

Solution to Apple
from page 7

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

Solution to Orange
from page 7

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

Solution to Banana
from page 7

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

Solution to Pear
from page 7

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

Solution to Grape
from page 7

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

ARTS
CENTER FOR
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AT MIT



Maya Beiser, Photo: Iolex

MAYA BEISER, UNCOVERED

FROM LED ZEPPELIN TO NIRVANA: CLASSIC ROCK TUNES TRANSFORMED

Accompanied by:
Bass: Jherek Bischoff, indie rock bassist/composer
Drums: Matt Kilmer, composer for Louis C.K.



September 25, 2015 / 8:00 PM
MIT Kresge Auditorium, W16

arts.mit.edu/sounding





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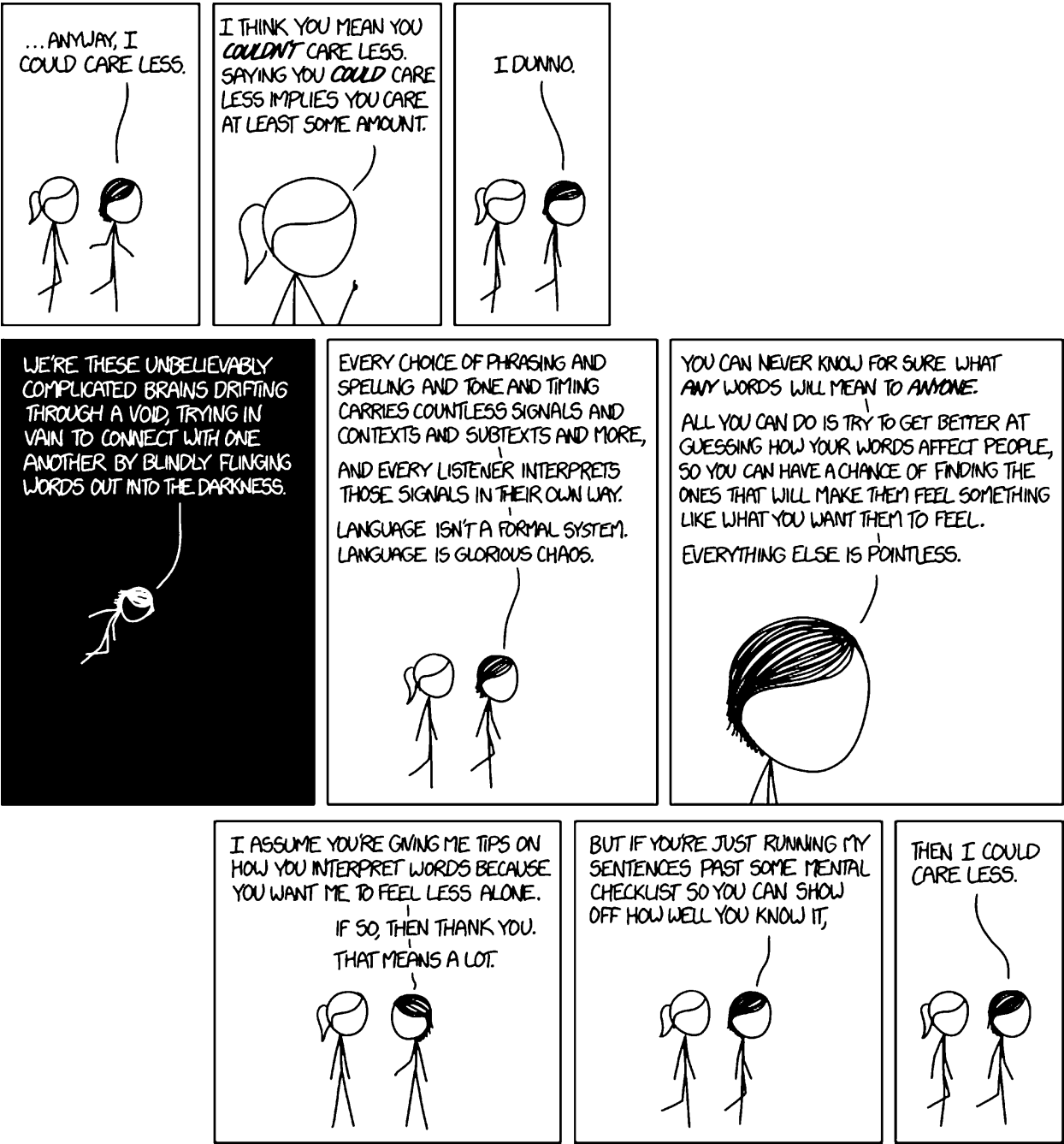


Sample topics:

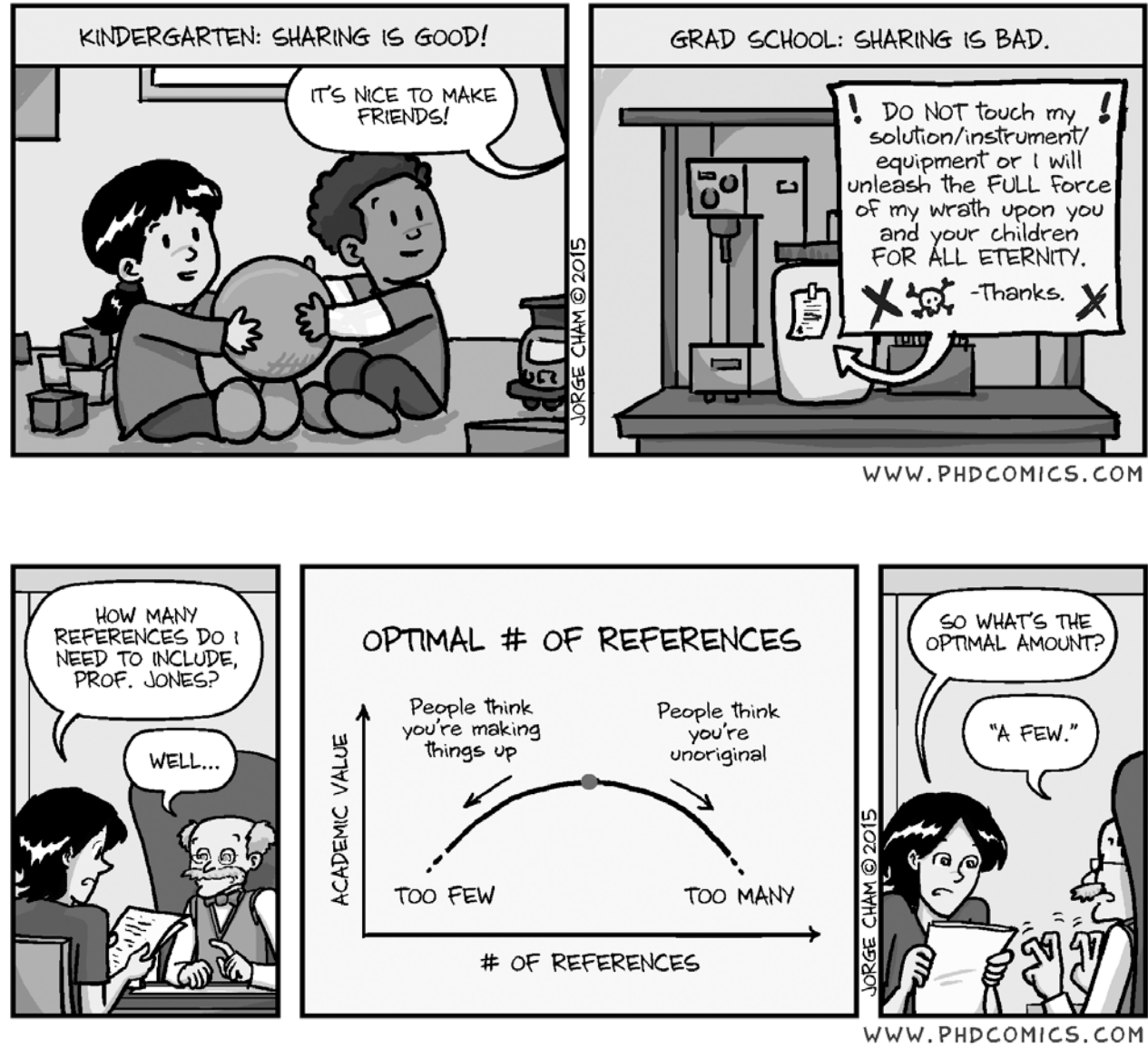
- Experiencing discrimination at MIT
- Choosing between divergent career paths
- Your slice of MIT culture
- Romance at MIT
- Or anything else you can tell as a compelling story

Email cl@the-tech.mit.edu with stories or proposals

[1576] I Could Care Less



literally could care less.



WWW.PHDCOMICS.COM

[illegible]

Apple Sudoku

Solution, page 3

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

Orange Sudoku

Solution, page 3

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

Banana Sudoku

Solution, page 3

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

Pear Techdoku

Solution, page 3

36x			20x	18+	
20x					1
	3-	108x			2
2x		6		20x	
	1-			24x	
120x					3

Grape Techdoku

Solution, page 3

1÷			14+	
	180x		12x	1
3			4	10x
216x			2x	5
4-	2		19+	
	20x			3

Durian Techdoku

Solution, page 12

120x				1-	
9x			288x		4-
	240x				
12x			2-		6
	60x			1-	
4			3x		2

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.

Siebel Scholars Class of 2016

The Siebel Scholars program recognizes the most talented graduate students in business, computer science, bioengineering, and energy science. Each year, 93 are named Siebel Scholars based on academic excellence and leadership and join an active, lifelong community among an ever-growing group of leaders. We are pleased to recognize this year’s Siebel Scholars.

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Morgan K. Moroi '16 faces off against a player from Worcester Polytechnic Institute for the ball. Moroi scored a goal in double overtime that propelled MIT to a 2-1 victory over WPI in their NEWMAC opener this past Saturday.

LENNY MARTINEZ—THE TECH

Bangkok police win joke award for econ

Police force absent from ceremony

Ig Nobels, from Page 1

from Taiwan, for example, concluded that most mammals take 21 seconds to empty their bladder regardless of its size. The Slovakian winners of the medicine prize, on the other hand, charted the persistence of male DNA in female saliva even one hour after intense kissing.

There are ironic prizes as well; the Bangkok Metropolitan Police were awarded the Economics prize for their policy of offering policemen cash incentives for refusing to accept bribes. Unfortunately, the police did not show up to collect their prize.

Although only an hour and a half, the ceremony was also punctuated with various peculiar segments; the traditional “welcome, welcome” and “goodbye, goodbye” speeches to open and close the event consisted of two people, quite literally, solely uttering the words “welcome” and “goodbye.” Sporadic moments of science (instead of silence) included looking at spectral lines for hydrogen and hearing the sound of helium fill a wooden box. There was also a three-act mini opera about the theme of this year’s ceremony: life. At two points in the show, audience members folded up

pieces of paper into airplanes and flew them at the stage. The awards were on a strict time schedule, and presenters only had one minute for their acceptance speeches; if they dared to go over, an eight-year-old girl deemed “Miss Sweetie Poo” stormed up to the podium and shouted, “Please stop! I’m bored.” This happened multiple times.

All the prize winners will be giving extended addresses at the Ig Informal Lectures hosted by MIT this Saturday, Sept. 19.

While some people might be insulted to win an Ig Nobel, other scientists embraced it. A team of doctors from the UK, for example, noticed that appendicitis can be loosely diagnosed based on how a patient feels pain after traveling over a speed bump. They showed their excitement by dressing up as a “road bump ahead” sign. The presenters donned ridiculous gear, too: think vibrant bow ties, silly hats, and neon tuxedos.

But even some researchers admitted that not every research program was worth continuing. The scientists behind the chicken-tail biomechanics were asked about the future of their project. They laughed.

“No,” they said. “We are done.”



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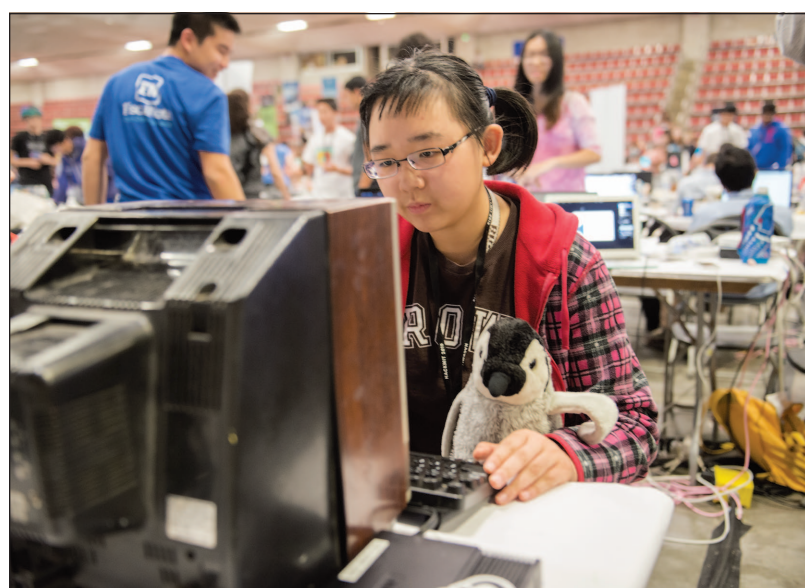
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HACKERS GONNA HACK

This year's HackMIT, run by the student group TechX, took place over the weekend.

Photography by Robert Rush



OXO7DT





Kale Rogers '16 shoots the ball during Saturday's water polo game against Brown University in the Zesiger Center. The final score was MIT 8, Brown 14.

VIVIAN HU—THE TECH

Solution to Sky Songs

from page 6

OMAHA	STEM	AGRA
NASAL	LAVA	SLOG
EMAIL	EXES	SAGE
APLACE	INTHE	SUN
SLAVS	OUTSET	
PBS	ODE	PDT
IOWAN	SLO	AUNT
SWINGING	ONASTAR	
ALMA	PIT	SHAME
	IRK	SOS
HEX		
NAGANO	SCREW	
FLYMETO	THEMOON	
LIRE	EIRE	BORED
ETON	SLAM	LEERY
ROSS	TYPE	ERODE

Solution to Current

from page 6

ADIOS	IDOL	HATS
LOOPY	FETE	OREO
POWEROF	ATTORNEY	
OMAR	FIDO	KRONA
	AIMEE	SRO
BATTERY	CHARGES	
NANOS	EAU	AVA
ATTRACT	PLANTER	
VII	OAF	MAORI
INCIRCUIT	COURT	
	NEO	NOHIT
STAFF	BELA	IPSO
HEWASIN	ADRYCELL	
ARON	MARY	EASED
HILT	PITA	SLOWS

Solution to Saturday

from page 6

RAMPEDUP	MAORIS	
UNIROYAL	ASPECT	
NIXONERA	ROTTER	
EMITS	TGIF	ALA
SANE	SWOON	ALAN
	METHOD	ACTING
PET	RUINS	EVADE
ELEGANT	PIASTER	
NOMAS	EWERS	ERS
APPLE	CHEEKED	
LETS	ROADS	EADS
IMF	WATT	MRMET
ZEALOT	HEGEMONY	
ENTIRE	EMOTICON	
STEEDS	RIBOSOME	

Solution to Durian

from page 7

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

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MIND & HAND BOOK

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The *Mind and Hand Book* is the official guide to MIT's expectations of all undergraduate and graduate students, including the policies on academic integrity, alcohol, drugs, hazing, hacking, and sexual misconduct.

➡➡ <http://handbook.mit.edu> ⬅️⬅️



Frank Urbanowski, longtime head of MIT Press, dies at 79

Revenue grew from \$3 mil to \$22 mil during tenure

MIT Press

The MIT Press mourns the loss of Frank Urbanowski, who served as director of the press for an unprecedented 27 years, building it into one of the largest and most successful scholarly publishers in the world. Urbanowski passed away after a long illness on Sept. 19 in Essex Junction, Vt. He was 79.

Urbanowski served as director of the press from June 1975 to January 2003, and is acknowledged as a pioneer in the strategy of the focused disciplinary specialization now widely adopted by university presses. Shortly after his arrival at the MIT Press, Urbanowski devised and implemented the publishing strategy that was fundamental to its success: focusing acquisitions and marketing efforts on a small number of selected disciplines. Under his guidance, the press grew from \$3 million to \$22 million in annual revenue, and from publishing an annual list of 135 books and four journals to 220 books and more than 30 journals.

Among the highlights of Urbanowski's time at the MIT Press were the establishment of a desktop publishing operation in the late 1980s, the creation of the first university press website, and the publication of the first interactive electronic book — "City of Bits" by William Mitchell — in 1994. He also established the MIT Press Bookstore on Main Street in Kendall Square in 1981.

In the late 1990s, Urbanowski created the Digital Projects Lab, an innovative digital-publishing

group that led to today's successful CogNet (the online community for the cognitive sciences) and ArchNet (the online resource for Islamic architecture).

In addition, he ably steered the MIT Press through two significant economic downturns, managing strong recoveries each time. The press celebrated its 25th anniversary as a full-scale university press in 1986, with Urbanowski, then serving as director and editor-in-chief, citing "faith in our staff" as his core reason for confidence in its future.

Frank Urbanowski ably steered the MIT Press through two significant economic downturns.

According to Amy Brand, current director of the MIT Press, who served as the acquisitions editor reporting to Urbanowski during the 1990s, "I and the staff of the MIT Press are deeply saddened by the news of Frank's passing. Not only was he a remarkable leader and mentor to many of us, but he was an extremely decent and warm human being. Frank's legacy endures as a source of inspiration for me and others at the press and in the broader academic publishing community."

Urbanowski was an engineering graduate of Virginia Polytechnic Institute and had many and diverse interests, from cabinet making to classical music. He was an opera fan, an avid rower and

member of the Cambridge Boat Club, and traveled widely. At his retirement, he moved to Vermont, where he enjoyed the country life and his many advisory positions for the University of California Press, Transaction Publishers, SUNY Press, and the Massachusetts Continuing Legal Education Council. During his career, he also served on numerous boards, including: Cambridge Insight Meditation Center, Wisdom Press, University of California Press, and University Press North-East.

Before coming to MIT, Ur-

banowski's publishing experience included editorial and management positions at the Educational Testing Service, The Free Press of Glencoe, and the College Division of Macmillan Publishers.

He is survived by his wife, Julia Blocksma; two daughters by a previous marriage, Alexandra Urbanowski and Tasha Urbanowski, as well as their husbands; two granddaughters; two stepchildren, Dewey Dunnington and Anneke Dunnington; and many cousins.

The family will hold a private ceremony in Vermont. Plans for a memorial service are forthcoming.

Reprinted with permission of MIT News (<http://newsoffice.mit.edu/>).

Death marks MIT's third suicide in 2015

Comes amid mental health push

Nickolaus, from Page 1

Mental Health were available to students.

Reif encouraged students to take advantage of those resources, and to reach out to one another. "Know that there is no shame — no shame — in asking for support," he told the crowd gathered in Lobby 10.

"When we learned the terrible news of her death, we thought it was important to gather the community as soon as possible," Reif said, emphasizing the need for community members to have the opportunity to support one another.

Nickolaus's death is the third student suicide at MIT this calendar year, and comes amid changes

and initiatives to improve mental health at MIT. These changes, many of which are under the label of the MindHandHeart initiative, include increased access to mental health care.

"What we're trying to do with the MindHandHeart Initiative is to help students manage stress, manage time, manage MIT," Chancellor Cynthia Barnhart PhD '88 said.

Members of the MIT community who feel affected by the deaths can access MIT student support resources and Mental Health Services at <http://together.mit.edu>. Mental Health Services is also available by phone at 617-253-2916 during the day and 617-253-4481 during nights and weekends.

A sampling of people you'll meet during a typical dinner at The Tech:

Derek, Course 1	Will, Course 8	Anne, Course 17
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
Kali, Course 7	Chris, Course 16	Marissa, Course 24

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MOVIE REVIEW

The true-life story of James “Whitey” Bulger gets bleak big-screen adaptation

Johnny Depp delivers chilling performance as notorious South Boston gangster

By Aleksandra Stankovic

There are few genres as enduring in American cinema as the gangster film (see *The Godfather*, *Goodfellas*, and *Casino*, for starters). These films collectively explore our cultural fascination with violent, charismatic criminals — self-made figures who operate outside the system to great personal gain and at the expense of law, order, and often many lives. Generally, these films portray the gangster's world as governed by highly intricate systems of hierarchy, fealty, and unwritten yet brutally enforced codes of behavior (no snitching!).

Though incredibly well-crafted, the film ultimately feels hollow.

Gangster films tend to be as formulaic as the gangs they portray are rigid, and director Scott Cooper's (*Crazy Heart*, *Out of the Furnace*) latest, *Black Mass*, is no exception. The film presents a compressed version of the real-life story of James "Whitey" Bulger (Johnny Depp), the notorious South Boston crime boss who rose in the 70's and 80's from being a relatively small-time gangster to becoming one of the city's central kingpins.

His success was due in no small part to a complicated alliance with the FBI, which was predicated on Bulger purportedly providing information against the North End's Italian Mafia. For Bulger, the Mafia was bad for business, and the FBI's crusade to bring down the mob (and gain acclaim and glory in the process) was a convenient opportunity to eliminate the competition. In exchange, the Bureau allowed his influence to expand unchecked for years, during which time Bulger led his brutal Winter Hill Gang with little opposition.

The movie explores Bulger's ties to the Bureau through his relationship with FBI agent John Connolly (Joel Edgerton), who grew up in the same South Boston neighborhoods as Bulger and his brother, Massachusetts senator Billy Bulger (Benedict Cumberbatch). An air of fatalistic resignation hangs over the exchanges between Bulger and Connolly: as one character explains, "We went straight from playing cops and robbers on the playground, to doing it for real on the streets."

Working from a screenplay by Jez Butterworth and Mark Mallouk (adapted from

a book written by Boston Globe reporters Dick Lehr and Gerard O'Neill, who helped expose the relationship between Bulger and the FBI), Cooper and cinematographer Masanobu Takayanagi (reteaming after *Out of the Furnace*) use tight framings and close, intimate camerawork to infuse the film with a grim, claustrophobic sense of foreboding. The film's interrogation-room framing device effectively provides structure to the story.

The movie's pacing is so controlled that at times it almost seems to stop entirely. Sometimes this effect works, particularly in the sequences where Cooper eschews narrative service in favor of exchanges which reveal the nature of his characters, like a chilling dinner party scene at the Connolly home. It is in these moments that the exceptional cast really shines, particularly Depp, who delivers a frighteningly good performance, even if the uncanny makeup effects used to transform him into the likeness of Bulger somewhat work against him. The film also features a number of standout contributions by terrific supporting actors, including Jesse Plemons, Rory Cochrane, Dakota Johnson, Julianne Nicholson, Corey Stoll, Peter Sarsgaard, and Kevin Bacon.

All of this amounts to an incredibly well-crafted film, but one that ultimately feels hollow. Aside from being a superficial character study of a notorious crime figure, *Black Mass* is also a chronicle of bureaucratic mismanagement, a cautionary tale of the corrupting powers of hubris and ambition, and also, to a lesser extent, an exploration of ideas of masculinity, loyalty, and success within the tightly woven working class community of 1970s South Boston. And this of course is the film's fundamental problem: in trying to cover enough ground to fill five different movies, it covers none of them well enough at all.

★★★★★

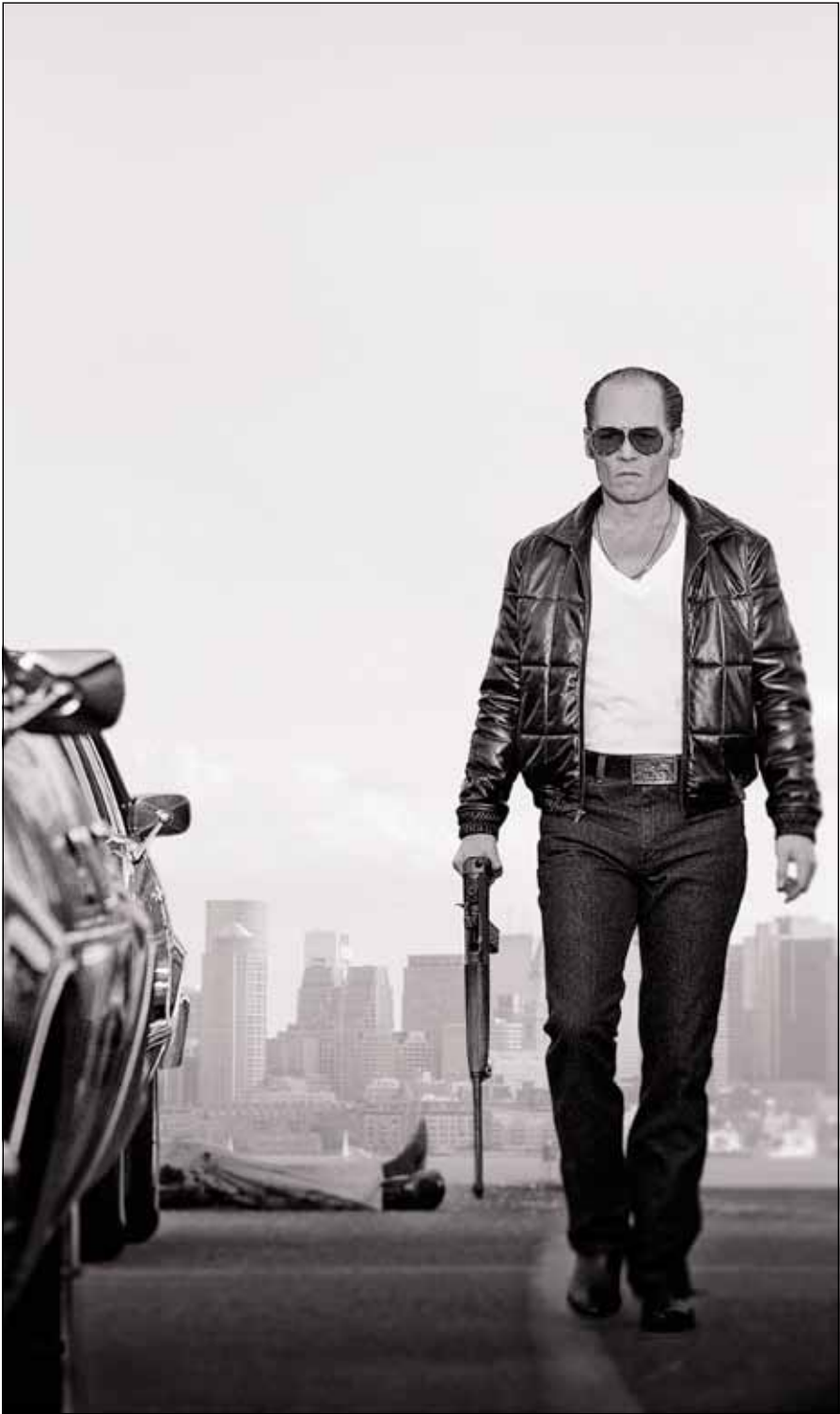
Black Mass

Directed by Scott Cooper

**Starring Johnny Depp,
Joel Edgerton, Benedict
Cumberbatch**

Rated R

Now Playing



WARNER BROS. PICTURES

Johnny Depp as Whitey Bulger in the drama ***Black Mass***, a presentation of Warner Bros. Pictures in association with Cross Creek Pictures and RatPac-Dune Entertainment, released by Warner Bros. Pictures.

CAMPUS ARTS

Stand-up comedy and science collide at BAHFest

Amateur and professional scientists debut non-sequitur theories

By Christopher Wang

This past Saturday, students and visitors filled MIT's Kresge Auditorium for the third annual Festival of Bad Ad Hoc Hypotheses. Created by Zachary Weinersmith, author of the *Saturday Morning Breakfast Cereal* webcomic, BAHFest featured the outlandish theories of six speakers who competed to give the best argued, most nonsensical scientific presentation.

A panel of four judges graded each presenter's science, performance, and ability to defend his or her thesis against questions. This year, the panel of judges included Max Tegmark, author of *Our Mathematical Universe*, and Rosemary Mosco, creator of *Bird and Moon: Science and Nature Cartoons*.

Each presenter disguised his or her act as a scholarly lecture, abusing figures and statistics to turn correlations to causations. The lecturers not only had to make their hypotheses understandable, but also had to endow their presentation with comedic timing. Each presentation was followed by questions from the judges, which needed to be answered with the right amount of science and absurdity.

Abby Howard, the keynote speaker,

began the evening by presenting a theory of her own creation. “The Negative Repercussions of the Repopulation of Deer in the Lower United States” demonstrated the rise of violent deer population through carefully documented research. Using statistical data and YouTube videos, Howard identified a personality shift in America’s deer. She claimed that deer in the U.S. have lived without natural predators for too long, creating a generation of aggressive and obnoxious animals. Among her proposed solutions, Howard suggested attaching knives to MIT’s cheetah and setting the robot loose on the belligerent deer.

The six following speakers came prepared with equally zany theories. Robert Townsend, a student from the University of Waterloo, spoke on the importance of “The Role of Alcohol in Human Evolution.” In Townsend’s reasoning, alcohol provides valuable calories at the small expense of lost motor function. In order to minimize alcohol’s negatives effects, evolution selected for those who could successfully survive a night of alcoholic social events. In Townsend’s model, this created a positive feedback loop in which the most socially adept drunk humans were best equipped

to acquire yet more alcohol. The audience loudly applauded Townsend's proof that alcohol creates better students, as can be seen in the prevalence of drinking on college campuses.

The audience loudly applauded a Waterloo student's proof that alcohol creates better students.

Other well-received presenters included Jacob Falkovich, who identified sleepwalking as an evolutionarily favorable trait. According to Falkovich, those who suffer from somnambulism (sleepwalking) are better prepared for endurance hunting, and make better mates. The most attractive of our early ancestors were those who never stopped working out, even while asleep. He connects the rise of unhealthy living with the rise of sleepwalking, suggesting that sleepwalking now serves as nature's way of forcing humans to exercise. When asked by Tegmark how college students remained fit

while sleeping so little, Falkovich quipped that perhaps Tegmark could find students “sleepwalking through his lecture.”

Some presenters, such as Daniel Harris, kept their theories simple. Harris studied the heartbeats of humans in stressful situations. He proposed that humans with “funky” beating hearts could not resist dancing under stress, and thus died when confronted by adrenaline inducing predators. Other theories twisted and turned, swinging from one tenuous premise to the next. Sanjay Kulkacek began building his hypotheses in an attempt to answer the question, “Why are we disgusted by small dead animals?” He finally concluded that this disgust arose from a natural rejection of cats, which he likened to parasites, who attempt to gain their host’s approval by killing small animals.

At the end of the night, Townsend's theory of alcoholic evolution was crowned the winner through a combination of judges scoring and audience applause (gauged by a hand-held decibel meter). Zachary Weinersmith himself presented the grand prize, a 3D-printed statue of a skeptical Charles Darwin, complete with an attached speech bubble: "I guess so..."

TV REVIEW

Doctor Who returns with 'The Magician's Apprentice'

Premiere hints at an exciting and emotional season

By Karleigh Moore
ARTS EDITOR

Fans awaiting the arrival of the ninth season of *Doctor Who* were subjected to quite the emotional roller coaster despite the fact that the season only just premiered this past Saturday. Before we even get to the episode we have the rumors and speculation. There has been speculation about impending regenerations (when The Doctor dies and regenerates into a “new” Doctor, and is consequently played by a new actor) and rumors about companion departures. Changing between Doctors and/or Companions is always a traumatic experience for fans.

As such, many fans were apprehensive about Peter Capaldi's season 8 debut as The Doctor, but he has managed to win over many fans with his sarcastic and mysterious take on The Doctor, and many viewers are incredibly excited to see him return for a second season. Sadly, it has been confirmed (only days before the premiere!) that Jenna Coleman, who plays The Doctor's Companion, Clara Oswald, will be leaving the show after this season. Capaldi and Coleman have incredible chemistry on-screen, and while I will be sad to see them part at the end of the season, I am excited to

see what else Steven Moffat has in store for us until then. I don't know about other fans, but I've got my fingers crossed hoping that the Twelfth Doctor will stick around for at least another season so that I don't have to experience a doubly heartbreaking season.

Though I had marked the date in my calendar the minute the release date was announced, it took me several pause-play cycles during the first several seconds of the episode to work up the courage to let the episode run. I felt like, given the recent news of Coleman's departure, I was only being set up and strung along for inevitable emotional devastation. I had to give myself the "it's only the first episode — how bad can things get" pep talk several times throughout the episode.

The Magician's Apprentice ended with a "To Be Continued," so the episode's many unanswered questions can be forgiven as long as next week's installment delivers. The episode attempted to welcome fans back into the saga by adding a few playful moments, and however amusing it was to see The Doctor-gone-rockstar in an "axe fight," the scene felt out of place and a little forced. Now *Doctor Who*, and science fiction in general, relies heavily on suspension of disbelief, but at times I felt that either I was extremely confused about what was

going on or that the show creators rushed a few too many elements in this episode. Missy (Michelle Gomez), the reincarnation of The Doctor's nemesis, The Master, is back. ("Cutting to the chase. Not dead. Back. Big surprise. Never mind.") However, this time Missy is a good guy. The Doctor sends Missy (not Clara or any of his previous Companions) his Confession (apparently some uber-personal Gallifreyan thing) with barely convincing rationale. What makes these elements so uncomfortable to watch and digest is that they are presented in a way that makes them not quite believable, and leaves the audience (or maybe it's just me) questioning their own sanity. Though I certainly wouldn't put it past writer Steven Moffat to have intentionally created such an episode. It's as frustrating as it is thrilling.

I won't give away the big event at the end of the episode, but I found it to be both shocking and expected. The true gem of the episode occurred during its last few seconds when we see just how far The Doctor is willing to go to help his friends, breaking his own rules and perhaps even the laws of time and space. If the first episode is any trustworthy indication, show writers will continue to explore themes of The Doctor's self discovery and self doubt — themes that

Doctor Who: The Magician's Apprentice

Written by Steven Moffat

On BBC America

**Premiered Saturday,
September 19**

have slowly been integrated into the past several seasons and heavily emphasised in season 8. I enjoyed that the episode added to the mystery of The Doctor, setting the stage for a (possible) reckoning of some serious, series-wide story arcs.

After watching *The Magician's Apprentice*, as a fangirl I would say, "I am 100% not okay" (a sentiment widely echoed on Tumblr, a homebase for many fan communities), and as a critic, I do expect a graceful coming together of answers and explanations in the next few episodes, or else I will be retroactively unimpressed with the premiere. Ultimately, anyone who likes *Doctor Who* will have a hard time, as always, coming away from the episode with anything other than net positive feelings.



Peter Capaldi stars as The Doctor in *Doctor Who*.

INTERVIEW

Boston Calling co-founder talks to The Tech

Mike Snow on the start and future of the semiannual music festival

By Ka-Yen Yau
STAFF WRITER

The fall installment of this year's Boston Calling Music Festival will occur on Sept. 25-27, filling City Hall Plaza with live concert performances all through the weekend. Although Boston Calling has only been around since 2013, it has already gained an impressive following, received national acclaim, and has attracted prominent artists such as Bastille, Lorde, Tove Lo, and Marina and the Diamonds. *The Tech* recently interviewed Mike Snow, one of the co-founders of Boston Calling, to talk about the festival's conception and successes.

“[My partner and I] worked for a radio station and media company here in Boston, so we had used public spaces to run some free and ticketed events. We ran a free concert on City Hall Plaza in the fall of 2009, and we had just thought it was such a great thing, because Boston has this musical heritage.

We thought from the aspect of a large concert. Boston was really the right place for [a music festival], so we put together a financial plan and we built the idea from there."

Boston Calling features an interesting mix of artists — some well-known and others not — from various genres. This year, the lineup consists of 23 different artists, including Alt-J, Hozier, Of Monsters and Men, and Walk the Moon. The variety is partially due to the complicated process that goes behind booking the artists for each show. “It’s who will have a record next year, it’s who’s touring, and it’s who you can afford. There’s a lot of things you have to factor in,” Snow said. But the eclectic lineup also comes with the benefits of attracting a diverse audience, helping new artists gain exposure, and enabling the audience to explore new types of music.

In addition to its impressive lineup, the creators also believe that the location is one of Boston Calling's most defining factors. "Boston is such a transient city. There are so

many people who have been here for school or for travel, therefore it really has that special meaning for a lot of people." Snow also mentioned that the availability of public transportation, other quintessential Boston activities, and the option to simply buy a one day pass (instead of having to commit to all three days), gives the audience the freedom to create an experience that best suits their interests. "I just think that music festivals in general are such a commitment, but for Boston Calling, it's like a choose-your-own-adventure book"

The local focus extends to the city's residents as well. When looking for workers to assist with things like lighting, sound, art installation, and other structures, Boston Calling always makes an effort to hire local people. "It does a lot for the community, and we certainly don't take all the credit for the creative things we've been able to do on the site; we've hired a lot of great people."

Unfortunately, Snow doesn't get much of

a chance to enjoy the festival as a spectator. "I'm truly lucky if I see an hour per day of music at the festival," he revealed. Snow hopes to find time to see Father John Misty, and Fun's lead singer Nate Ruess, both of whom he describes as great performers. "[Nate and I] had fun at the first Boston Calling that we ever did. I'm just really excited to see Nate again and to high five him and see him on the stage again."

The festival's organizers focus on creating a unique and enjoyable experience is truly paying off because performing artists (and inevitably, many members of the audience) decide to return to Boston Calling. "The artists and the attendees are our top two priorities when it comes to this festival and it's humbling when you get a guy like Nate Ruess from Fun to say, in a very heartfelt way, that [his show at Boston Calling] was one of the greatest shows that [he] ever played. It's awesome!"

Editor's note: parts of this interview were edited for clarity.

KEEP
CALM
AND
JOIN
THE
TECH

Bahr discusses figure skating, imposter syndrome, teaching

Barriers stand between students and faculty, he says

Talks, from Page 1

gled then — and still struggles — with “imposter syndrome.” He hadn’t considered becoming a professor until later in life, and even then, he planned to teach at a small liberal arts school, not at MIT. When MIT accepted him, he felt simultaneously elated, undeserving of the title, and deeply uncomfortable with his role.

“It felt like I had won a figure skating competition,” Bahr said. “[I was] afraid that even though I got the job, [the judges] would realize [their mistake] and ask ‘how did you ever pass your first figure skating test?’”

Bahr said that the danger of the “imposter syndrome” is that people are upset at not being able to attain what they perceive as perfection. He combatted this negativity by

being open and honest about how research was not his true calling, and that teaching was. By treating research as a job, he could separate the all-consuming desire to pursue research from his identity of a teacher.

He said he realized that identifying as a scholar doesn’t necessarily make one automatically smarter nor does identifying as a teacher automatically make one nobler. According to Bahr, good figure skaters sometimes made bad free skaters, and the worst free-skater could be a brilliant figure-skater.

Bahr said he found greater value in teaching because he could better communicate with his audience. In his experience, inspiring teachers created a lifelong love for learning. Later, he discovered that the satisfaction from teaching and doing research were even mutually

dependent.

Since the 1980s, interest in competitive figure-skating has slowly faded away, according to Bahr. Fewer coaches will pass the art on to pupils. Yet, Bahr hopes that the *techne* (Latin for ‘craft’) of figure-skating will survive along with all the other *technes* that deep and specialized research develops. Since technology is a sum that is greater than its individual *technes*, all crafts should be preserved.

Bahr acknowledges that the professional disconnect and career disparity between professors and pupils intimidates students. He urged: “remember that they’re people — ask them questions, ask what was grad school like for you ... professors need to be better at signaling that that’s a part of their job.” Gibson hopes that the MIT Faculty Talks will build that bridge.



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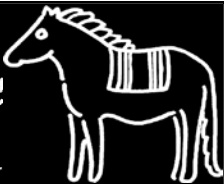
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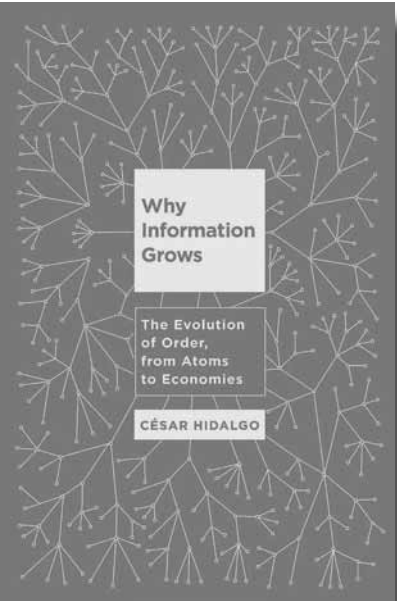


authors@mit presents:

César Hidalgo

Associate Professor, MIT Media Lab

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The Evolution of Order, from Atoms to Economies



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All in Room 5-134



Sean Bingham '16 set the pace with two goals while John Kramer '16, Kareem Itani '17, and Joseph Han '17 all added to the scoreline. Goalie Jake Amereno made six saves en route to his third clean sheet of the season.

Women's soccer

Morgan Moroi '16 scored the winner in the second overtime

period to lead MIT past WPI 2-1 in its first NEWMAC contest of the season. MIT improved to a 3-2-1 record for the season after playing their second double overtime game in a week. Allie Hrabchak '19 opened the scoring for the Engineers.

Women's volleyball

The MIT women's volleyball team came back from two sets down to defeat Springfield College, 25-18, 24-26, 21-25, 25-18, 15-8, in a NEWMAC contest on Saturday afternoon. Megan Gebhard '17 notched 31 kills to go along with five blocks and two aces as the Engineers im-

proved to a 10-1 record for the season.

Football

The MIT football team jumped on to 7-0 lead within two minutes of their first-ever match against RPI when Danny Callahan '16 found Seve Esparrago '16 in the endzone. However, that would be all the scoring that the team would manage, losing 7-42 to fall to an 0-3 record.

MIT plays its home opener on Saturday, Sept. 26, when it takes on Maine Maritime at a noon kickoff.

—*Souparno Ghosh*

*Team blanks Mount Holyoke 9-0
to improve to 4-0 on the season*

By Phil Hess

DAPER STAFF

Playing on the road for a second time in the 2015-16 season, the MIT women's tennis team remained undefeated, recording an impressive 9-0 victory over Mount Holyoke College in a New England Women's and Men's Athletic Conference (NEW-MAC) contest. Junior Elysa Kohrs '17 was a winner at both the No. 1 singles and doubles to help the Engineers to their fourth straight win.

MIT (4-0, 4-0 NEWMAC) started the match with identical 8-1 wins at No. 2 and No. 3 doubles to take an early 2-0 advantage. Mount Holyoke (4-2, 2-2 NEWMAC) saw it's No.

1 team of freshman Ayame Yazawa and senior Margaux Holloschutz put up stiff resistance against MIT's team of Kohrs and Cindy Liu '18, but the Engineers' duo prevailed, 8-3, to put MIT up 3-0 going into singles play.

Dora Tzeng '18 gave MIT its first point in singles play, taking a 6-0, 6-1 win over sophomore Ishita Tibrewal in the No. 3 match. Wendy Kong '17 then secured the match win for the Engineers, defeating her opponent in the No. 6 match by a 6-0, 6-0 score. MIT went on to capture the remaining singles matches in straight sets, with the closest contests coming at No. 2 and No. 5. In the No. 2 match Kelly Zhu '19 held off Holloschutz, 6-2, 6-2 while Liu defeated Alexa Colas '17, 6-3, 6-1 in the No. 5 contest.

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2015 MIT FALL CAREER WEEK SCHEDULE

Schedule is subject to change. Please visit career-fair.mit.edu for updates.

MONDAY, SEPTEMBER 21ST

Informational Sessions			
APT	5:00 – 6:00 PM	32-144	
SpaceX	6:00 – 7:00 PM	4-237	
Vecna	6:00 – 7:00 PM	3-370	
Pandora	6:30 – 7:30 PM	4-149	
IBM Watson	7:00 – 8:00 PM	4-231	

TUESDAY, SEPTEMBER 22ND

Informational Sessions			
Akamai Technologies	11:00 AM – 12:00 PM	West Lounge (W20-201)	
Electronic Arts	11:00 AM – 12:00 PM	PDR 1 (W20-301)	
Levant Power	5:00 – 6:00 PM	West Lounge (W20-201)	
Kensho	5:00 – 6:00 PM	4-231	
GoDaddy	6:00 – 7:00 PM	32-124	
Oracle	6:00 – 7:00 PM	32-155	
Facebook	6:30 – 7:30 PM	4-370	
NVBOTS	7:00 – 8:00 PM	1-135	

WEDNESDAY, SEPTEMBER 23RD

Informational Sessions			
MemSQL	5:00 – 6:00 PM	3-333	
Hudson River Trading	5:00 – 6:00 PM	W20-407	
Superpedestrian	5:30 – 6:30 PM	1-242	
Sandia National Laboratories	5:30 – 6:30 PM	5-217	
Athenahealth	6:00 – 7:00 PM	4-153	
Shell Oil Company	6:00 – 7:00 PM	6-120	
Boeing	6:30 – 7:30 PM	35-225	
Palantir Technologies	7:00 – 8:00 PM	32-155	
Ropes & Gray LLP	7:00 – 8:00 PM	32-144	
ExxonMobil Corporation	7:30 – 8:30 PM	32-141	
Industry Panels			
Software	InterSystems, Appian, Rev	11:00 AM – 12:00 PM	Mezzanine Lounge (W20-307)
Other Events			
General Motors LLC Vehicle Display	9:00 AM – 3:00 PM	Student Center Plaza	

THURSDAY, SEPTEMBER 24TH

Informational Sessions			
Jane Street	5:00 – 6:00 PM	56-114	
Stripe	5:00 – 6:00 PM	3-333	
General Motors LLC	5:30 – 6:30 PM	2-105	
National Security Agency	5:30 – 6:30 PM	4-149	
Yelp	6:00 – 7:00 PM	56-154	
Two Sigma	6:00 – 7:00 PM	4-163	
Ab Initio Software	6:30 – 7:30 PM	5-217	
Quora	7:00 – 8:00 PM	32-155	
Dropbox	7:30 – 8:30 PM	4-370	
Five Rings Capital	8:00 – 9:00 PM	66-144	
Industry Panels			
Technology Platforms	Microsoft, Samsung Electronics, Verseon, Etsy	5:30 – 6:30 PM	35-225
Financial Software	Capital One, Tower Research Capital	6:30 – 7:30 PM	4-237
Software Development Solutions	Amplitude, Factual, JetBrains Inc.	7:30 – 8:30 PM	4-270
Other Events			
Volunteer Kick-Off Reception			
Career Fair Volunteers, join us for hors d'oeuvres, refreshments, and relaxed networking with our sponsors!			
Volunteers only.	8:00 – 10:00 PM	Lobdell (W20-208)	

FRIDAY, SEPTEMBER 25TH

CAREER FAIR

Meet representatives from over 400 registered companies. Don't forget your resumes! All MIT Undergraduate students, Graduate students, Post-Doctoral fellows and recent Alumni welcome!	10:00 AM – 4:00 PM	Johnson Athletics Center (W34) Rockwell Cage (W33)
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Other Events			
Ford Motor Company Vehicle Display	9:00 AM – 5:00 PM	Student Center Plaza	
SWE Banquet			
The Society of Women Engineers Career Fair Banquet is a relaxed networking opportunity for companies to interact with students in a smaller setting. Dinner will be offered at no cost to selected companies and students.	7:00 – 9:00 PM	Visit swe.mit.edu for further information on registration and location	

SATURDAY, SEPTEMBER 26TH

Career Fair			
Interviews	10:00 AM – 5:00 PM	Johnson Athletics Center (W34) GECD Offices (E39)	
Other Events			
Networking Reception			
By Company Invitation only.			
At the Career Fair, participating companies will invite a limited number of students to the Networking Reception. This event will facilitate a casual interaction between company representatives and potential candidates. However, it is NOT a substitute to interviews or the respective company's application process.			
If you receive an employer invitation to this event, do not lose your card, as it will be required at the door for admission.	6:00 – 8:00 PM	La Sala de Puerto Rico (W20-202)	



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