

Charles M. Vest speaking at MIT's Commencement.

DONNA COVENEY

OBITUARY

Charles M. Vest, champion of diversity and openness

By Steve Bradt
MIT NEWS OFFICE

Former MIT president Charles M. Vest — a tireless advocate for research and science, and a passionate supporter of diversity and openness — died of pancreatic cancer at his home in the Washington area on Dec. 12. He was 72.

As MIT's 15th president, serving from 1990 to 2004, Vest led the Institute through a period of striking change and growth. A mechanical engineer by training, Vest was president of the National Academy of Engineering from 2007 until earlier this year.

During Vest's presidency — the third-longest in the Institute's 152-year history — MIT renewed its commitment to education and research through major innovations in both areas; developed strong ties with academic, government, and industry part-

ners around the world; broadened the diversity of its people and programs; and transformed its campus with dramatic new buildings. MIT's endowment nearly quadrupled during Vest's tenure, growing from \$1.4 billion to \$5.1 billion.

"Through its own work, and especially through the lives and works of its graduates, a great university can strive to make the world well," Vest wrote in 2004. "The knowledge we generate, the things we come to understand, and the devices we build can improve health, economies, security and the quality of life. MIT must continue to be optimistic in its vision of why we are here and what we can do."

An era of multifaceted growth
Consistent with Vest's optimistic interest in the

Charles Vest, Page 13

MIT's Ludwig Center receives \$90 million for cancer research

Ludwig Cancer Research gifts \$540 million to 6 centers

By Anne Cai
EDITOR IN CHIEF

MIT's Ludwig Center for Molecular Oncology, housed within the Koch Institute for Integrative Cancer Research, has received a gift of \$90 million from Ludwig Cancer Research to study metastasis, the spread of cancer from a primary tumor to other parts of the body. In FY2013, MIT received \$58 million research funds from non-profits, according to the treasurer's report.

MIT is one of a group of six institutions that received a total of \$540 million to fund cancer research on behalf of late American shipping magnate Daniel K. Ludwig. This sum completes the Ludwig gifts to the endowment, bringing Ludwig

Cancer Research's total gifts to the Ludwig Centers to \$900 million since their establishment in 2006. The other Ludwig Centers are located at Harvard University and the Dana-Farber Cancer Institute, Johns Hopkins University, the University of Chicago, the Memorial Sloan-Kettering Cancer Center, and Stanford University. The gift is the largest ever given to Harvard Medical School, according to HMS's cell biology department chair Joan Brugge, and is "one of the largest in the Institute's history," according to an MIT press release.

"This funding will enable the centers to continue their pursuit of groundbreaking cancer discoveries," said Ed McDermott, Ludwig trustee and president and CEO of the Lud-

wig Institute for Cancer Research. "It is our hope that this new funding — which is long-term and flexible in nature — will contribute in some small way to new discoveries."

The philanthropic gift comes at a timely moment, said Weinberg, describing federal funding as "in freefall."

"We're in critical times for American biomedical research," said Weinberg. "Research funding in the federal level has decreased, and in certain cases, effectively collapsed."

"Having a permanent endowment that will support research in perpetuity will allow us to take on high-risk, high-reward research strategies, to take a long view and

Ludwig, Page 12

Hazel Sive steps down as assoc. dean of science

Addressed education, diversity, community

By Anne Cai
EDITOR IN CHIEF

Hazel L. Sive stepped down as the associate dean of the School of Science on Dec. 16. Sive, who has served in the position since its inception in 2007, has returned to her post as a professor of biology.

"[Professor Sive] has taken the lead in the School's efforts to increase diversity, and she has represented the School well in all Institute-wide educational activities, especially MITx," said Marc A. Kastner, who stepped down in December as dean of the School of Science, in a statement. "I have greatly enjoyed working with her and I am deeply grateful for her partnership during my years as dean."

A biology professor and a member of the Whitehead Institute for Biomedical Research since 1991, Sive will be working on an MITx course for next year tentatively entitled "Frontiers and Fundamentals of Development Biology." She will also continue co-chairing and serving on several committees and task forces, such as the Institute-wide Task Force on the Future of MIT Education.

Sive began her tenure as associate dean of science focusing on educational issues and initiatives, but went on to address issues of diversity and fair treatment, as well as develop the postdoctoral and junior faculty communities.

"My goals as associate dean were

Sive, Page 14

IN SHORT

The UROP deadline for IAP sponsored research, credit, and volunteer is Thursday, Jan. 9. There is no direct funding during IAP.

The last day to petition for January Advanced Standing Exams is Friday, Jan. 10.

Don't have any plans for IAP? Check out all of the different non-credit offerings at student.mit.edu/iap.

The final reports from the Kendall Square and Central Square Advisory Committees have been released and are available for download at <http://www.cambridgema.gov/CDD/News/2013/12/k2c2final-reportsreleased.aspx>. Zoning discussions based on the reports will continue in 2014.

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

Admissions says yes to 9 percent of early applicants

More apply early, but most must wait until March; application debuts 'Maker Portfolio' section

By Kath Xu
ASSOCIATE NEWS EDITOR

MIT admitted 612 students for the Class of 2018 under its early action program this year. This number represents a record low early acceptance rate of 9.0 percent, a decrease from the 9.9 percent admittance rate last year.

Of the 6,820 applicants, 4,538 students were deferred, and 1,403 were rejected. The rest of those not admitted either withdrew before decisions were released or submitted incomplete applications.

Hundreds of applicants showcased projects done outside of school in a new optional section of the application, the "Maker Portfolio," according to Dean of Admissions Stuart Schmill '86.

MIT's early action applicant pool has grown over the past few

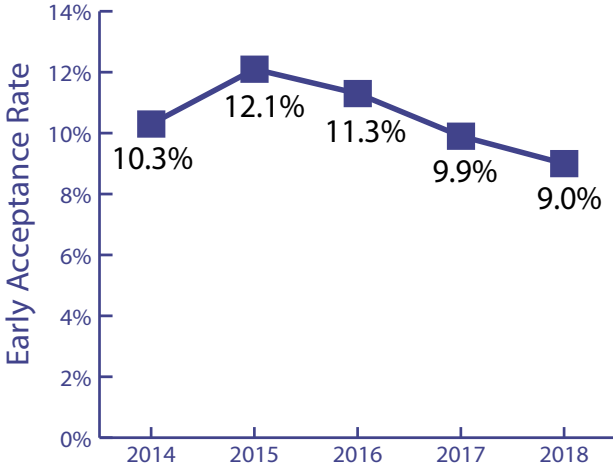
years: slightly over 6,000 students vied for an early spot in the Class of 2016, 6,500 for the Class of 2017, and now almost 7,000 for the Class of 2018.

Unlike the eight Ivy League institutions, MIT allows students to also submit early applications to other institutions with no penalty. Harvard, Yale, and Princeton all saw slight increases in their single-choice early action acceptance rates this year — Harvard admitted 21.1 percent of its applicant pool; Yale, 15.5 percent; and Princeton, 18.5 percent.

On the other hand, Stanford's early acceptance rate of 10.8 percent was the lowest in several admissions cycles.

According to Schmill, women make up 49 percent of this round's

Early action, Page 12



Class of 2018: 612 Accepted, 4,538 Deferred, 1,403 Rejected

INFOGRAPHIC BY WILL CONWAY AND ARICA WYCHE

LATEST FROM THE COEN BROTHERS
Inside Llewyn Davis is a beautifully scored trip back to the 1960s.
ARTS, p. 8

WORK DONE FOR HIRE
MIT's Joe Haldeman's science fiction war memoir. **ARTS, p. 10**

SECRET LIVES OF RESEARCHERS
Navigating the landscape of knowledge, meerkat-esque. **CAMPUS LIFE, p. 15**



THE DESOLATION OF SMAUG
Part two of *The Hobbit* is an adventure worth watching.
ARTS, p. 9

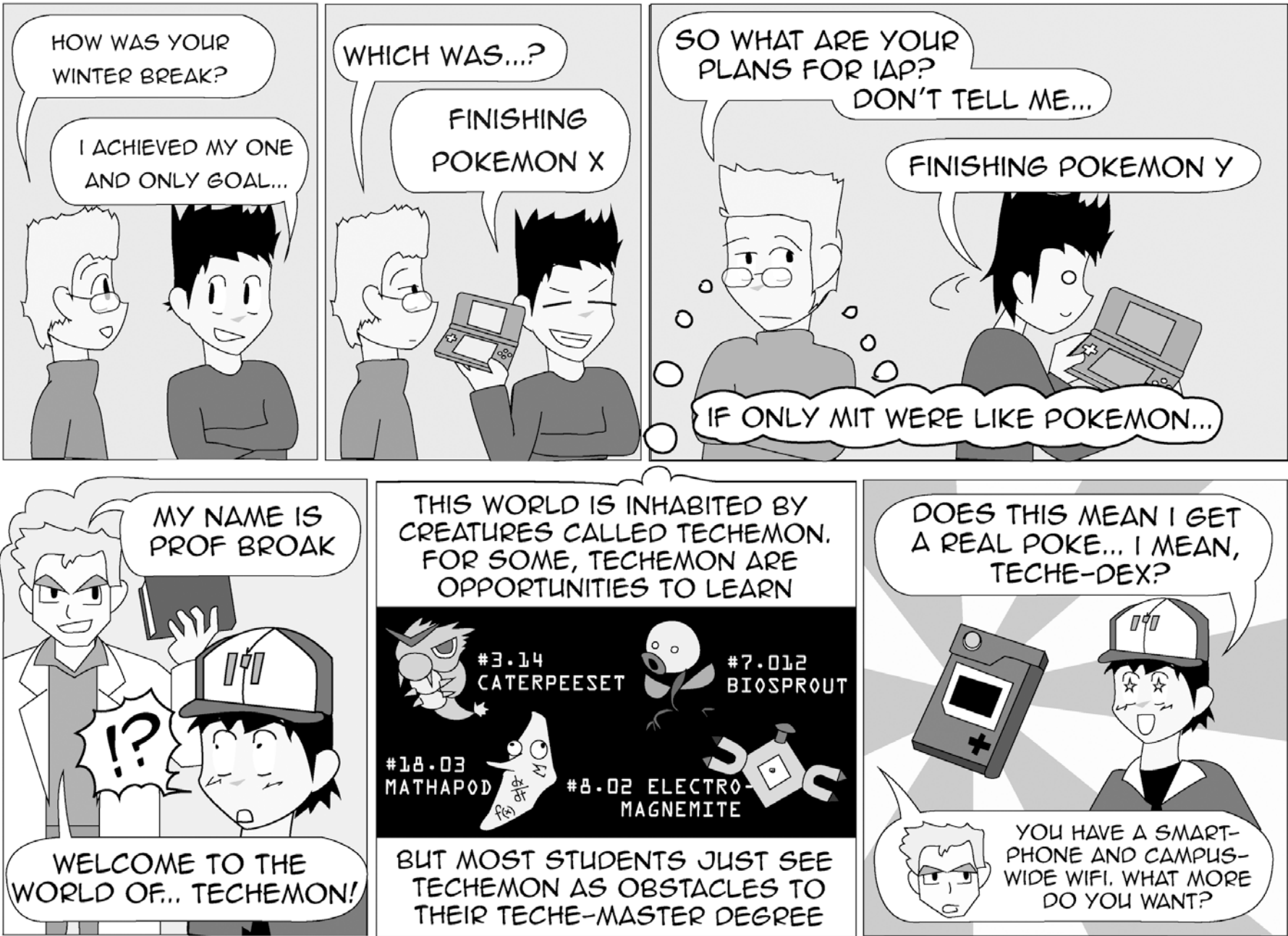
A SOLUTION: BETTER BULLETS
In the debate over gun control, a bullet solution is often overlooked.
OPINION, p. 4

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Q.E.D. (QUITE EASILY DONE)

BY ERIKA TRENT



TO BE CONTINUED



by Jorge Cham



WWW.PHDCOMICS.COM

Genie-ology by Sally R. Stein

Solution, page 13

- ACROSS**

 - 1 Junk email
 - 5 Top poker cards
 - 9 Billiards bounce
 - 14 Roll of cellophane
 - 15 Spicy Asian cuisine
 - 16 Really like
 - 17 Neck of the woods
 - 18 Diplomacy
 - 19 Gotten up
 - 20 Cordial statement
 - 23 Winter driving hazard
 - 24 __ Angeles
 - 25 Caravan beasts
 - 29 Pack on pounds
 - 31 Crunchy sandwich, for short
 - 34 Antitheft device
 - 35 Crease
 - 36 Theater production
 - 37 Tanning-parlor device
 - 40 Gets the point
 - 41 Responsibility
 - 42 Juliet's love
 - 43 Finish up
- DOWN**

 - 1 Wild guess
 - 2 Remove, as a rind
 - 3 Chimps and gorillas
 - 4 Vegetarian's no-no
 - 5 Houses' storage areas
 - 6 Pursue
 - 7 Per person
 - 8 Locale
 - 9 Egg box
- 44 Mom's sister
 - 45 Provides food for
 - 46 List-shortening abbr.
 - 47 __ Baba
 - 48 Annoys
 - 57 Up in arms
 - 58 Vietnam neighbor
 - 59 "Yikes!"
 - 60 Cruel ones
 - 61 Silent performer
 - 62 Christmas season
 - 63 Principle of faith
 - 64 Head the cast
 - 65 Stare in wonder
- 10 Mexican farewell
 - 11 Optimistic
 - 12 Triple-decker cookie
 - 13 Diner's list
 - 21 Mrs. Flintstone
 - 22 Lose traction
 - 25 Bring about
 - 26 Director Woody
 - 27 Defeated in chess
 - 28 Makes a mistake
 - 29 Leave the house
 - 30 "__ fair in love . . ."
 - 31 Hold responsible
 - 32 Less plausible, as an excuse
 - 33 Mistakes in print
 - 35 Huckleberry of fiction
 - 36 Essence of a novel
 - 38 __ for (verify)
 - 39 Conductor's workplace
 - 44 Give testimony
 - 45 Not as remote
 - 46 Lauder of cosmetics
 - 47 Fragrance
 - 48 Very funny one

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- 49 Craving
 - 50 Farm shelter
 - 51 Shade trees
 - 52 "Be patient!"
- 53 Cymbal cousin
 - 54 Horse-stopping shout
 - 55 All over again
 - 56 Center of an egg

Solution, page 13

1 Put it to
6 Somewhat off
11 Email or ltr.
14 This and that
15 Offend
16 Grazed, perhaps
17 Bunch of, so to speak
18 Fluffy feather
19 Humdrum pattern
20 Start of a quip
23 Dollar stretcher
24 Outdo
25 Clerical garment
27 Vibration
29 Clad like Claudius
30 Newspaper space
34 Airport info
35 Middle of quip
38 Spice in some sauces
40 Family member
41 Strut
43 Did once

48 Campout snack
49 KGB creator
52 Part of speech
53 End of quip
56 Crispy lunch
57 Clown employer
58 German exports
59 One-quarter of quadri-
60 Brief cybercomment
61 Certain OPEC minister
62 Short time
63 Concert instruments
64 Home for some
houseplants

- 1 Ultimately
- 2 Synagogue ram's horn
- 3 Water heater
- 4 Admire
- 5 Kind one
- 6 Pie filling
- 7 Paper producers

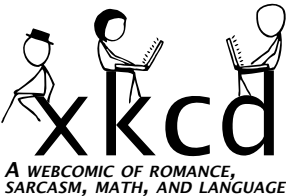
8 Cry of surrender
9 Basic math
10 Handles properly
11 Soak, as a steak
12 Well-thought-out
13 Pick up on
21 Condense
22 Boring tool
26 Music media
28 Outmoded
29 Japanese entrée
31 "... __ a lender be"
32 Santa __ winds
33 Any birthstone
35 Quote puzzle
36 Converges on
37 Alliance based in DC
38 UK lawmakers
39 Eeyore creator
42 Insufficiency
44 Hold out
45 Thingy
46 What a certain fork is for

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47 Infant wear
49 Milking-machine
attachment
50 Sharply sloped

51 Attempts
54 29th state
55 Polish destination
56 Motor coach

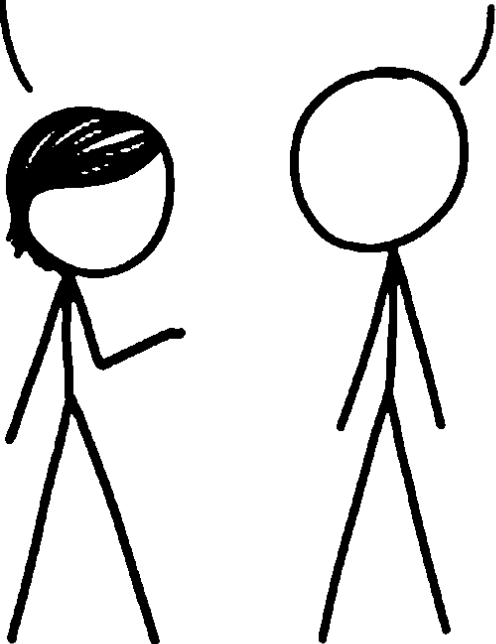
A hand-drawn illustration in black ink on a white background. On the left, a woman is shown in profile, walking towards the right. She has long, wavy hair and is wearing a simple tank top. Above her head, the word "Sexy" is written in a casual, handwritten font. To her right, there is a small table with a single leg. On the table sits a cup of coffee on a saucer. Above the cup, the word "Gross" is written in the same casual, handwritten font. A simple, curved line connects the woman's head to the coffee cup, suggesting a visual comparison or a path of sight.



by Randall Munroe
[1312] Haskell

CODE WRITTEN IN HASKELL
IS GUARANTEED TO HAVE
NO SIDE EFFECTS.

...BECAUSE NO ONE
WILL EVER RUN IT?



The problem with Haskell is that it's a language built on lazy evaluation and no-body's actually called for it.

SATURDAY MORNING BREAKFAST CEREAL

BY ZACH WEINER [3228]



Ear candy

By Chennah Heroor
STAFF WRITER

Inside Llewyn Davis focuses on the life of a young folk singer in Greenwich Village during 1961. But the titular Llewyn Davis (Oscar Isaac) is extremely unlikely. He is

ALISON ROSA

In essence, *Inside Llewellyn Davis* is story with more style than

Inside Llewyn Davis is a good, but not great movie. It's one without a lesson, but not devoid of hope or hilarious comic irony. It's the kind of pensive movie that you really need to watch intently to enjoy, as distractions will keep you from feeling the subtler emotions

Now playing

throughout the movie. But if you can't muster the energy to watch the entire movie, at least make sure you listen to the hauntingly beautiful soundtrack (especially "Fare Thee Well").

Too emotionally cold-blooded for a mammalian audience

By Kristen Sunter
STAFF WRITER

"For the first time in movie history, audiences will truly see and feel what it was like when dinosaurs ruled the Earth," claims the website for the film, so audiences are bound to compare the technical aspects of this film to what was cutting edge in *Jurassic Park*. While tropical mists in *Jurassic Park* cloaked any less than perfect CGI, *Walking With Dinosaurs* shows us everything they could

The dinosaurs interact with each other, but their mouths do not move, which preserves the dignity of the animation style and also probably avoids landing the characters in the uncanny valley. Instead, the voice actors say what the animals are communicating in some other way, much like other animal films like *Milo and Otis*. The body language of the dinosaurs is well animated, but the voice actors are so talented that they could have almost done the story as a radio program, especially John Leguizamo as Alex, the *Alexornis* (an ancestor of modern birds). Leguizamo absolutely nails an extended cut-

It's almost unbelievable how emotionally flat *Walking With Dinosaurs* is in contrast to another movie that comes to mind when tracing the cultural heritage of this film. *The Land Before Time* tells a story of dinosaur friends fighting to survive famine and has a heartbreaking scene where Littlefoot's mother dies. But here, nothing is said after Patchi and Scowler witness their father's death except "he's not coming back", and nothing at all is said of their mother or siblings. It's as though they couldn't remember that they had any. Perhaps the filmmakers gave the dinosaurs only the emotional range appropriate for species with brains of their size. It might have been too much to show the gutted corpse of their father being pecked over by scavengers, but they could have done something to convey the loss to us, perhaps letting a shadow fall across Patchi and Scowler as they come out of hiding. The film cer-

Now playing

tainly doesn't shy away from gross-out gags with feces and vomit, but it shies from death even while showing predators hunting and killing. Perhaps showing death but otherwise avoiding the subject was meant to create an ambience of danger for what is otherwise a "boy meets girl, boy loses girl, boy wins girl back" plot. The overarching message of the story is never give up, but, if you must die, die for a reason, but the film never makes an emotional connection that can truly deliver that message.



COURTESY OF 20TH CENTURY FOX



MOVIE REVIEW

An adventure worth watching

Part two of *The Hobbit* in theaters now

COURTESY OF WARNER BROS. PICTURES

Silvan Elves leading their captives, Thorin Oakenshield's dwarves, in *The Hobbit: The Desolation of Smaug*, the second installment in *The Hobbit* Trilogy.

By Karleigh Moore

STAFF WRITER

Tolkien fans have been eagerly awaiting the release part two of *The Hobbit*, and that day has finally come. *The Desolation of Smaug* was as exciting, funny, and adventurous as to be expected from a Tolkien universe brought to life by Peter Jackson. The main cast from the first movie returns so this movie is as full of great actors as before. Of course the scenery is breathtaking, featuring incredible spans of mountains and forests — just as magical as Tolkien describes in his series.

For those of you who are Legolas fans, you will be pleased to know that Orlando

Bloom does get quite a bit of screen time. He leads some pretty epic and strangely hilarious battle and fight sequences. We get to see a bit of the forest elves and we learn even more about the dwarves. The film includes references to *The Lord of the Rings* future story and we get to watch as Middle Earth approaches terrifying times with the rise of Sauron's armies. The movie is packed with personality from the dwarves in the company and their humorous interactions.

While there were many amusing scenes, the movie was definitely suspenseful and action-packed. Bilbo and the dwarves are separated from Gandalf and must continue the journey alone. They quickly discover that overcoming the obstacles in their path is not

so easy without the wizard. The company is in a rush to make it to the Misty Mountains before Durin's Day so that they can find the Secret Door and reclaim their home. But finding the door is only their first problem, because what awaits them in the Mountain is the terrifying dragon Smaug. Benedict Cumberbatch makes a convincing Smaug, adding an eerie hiss to the dragon's booming voice. As usual, all of the monsters are incredibly creepy and grotesque, ensuring that the protagonists will have their work cut out for them.

Will the dwarves and Bilbo escape the Mountains unscorched and intact? Start your year on an enjoyable note — get to the theaters as soon as possible to find out!

★★★★☆

The Hobbit: The Desolation of Smaug

Directed by Peter Jackson

**Starring Martin Freeman,
Ian McKellan, and Richard
Armitage**

Rated PG-13

Now playing

MOVIE REVIEW

A spoonful of saccharine

PL Travers would not have approved of this film either

By Kristen Sunter

STAFF WRITER

It should come as no surprise that a movie with the Walt Disney Company imprimatur shows their founder as a kindly fellow, who insists that he only wants to make a film adaptation of *Mary Poppins* to fulfill a promise he made to his daughters when they were children.

Played by the ever likeable Tom Hanks, Disney invites PL Travers (Emma Thompson), the author of the popular children's books about the magical governess, to the Walt Disney Studios to convince her to sign away the movie rights, which he has been after for twenty years. He caters to the irritating whims of "*Mrs. Travers*," as she insists on being called, while showing nothing but support for the team that must work through the script with a wet blanket like

her. If you do not leave the theater wishing that you too could have had a guided tour of Disneyland with Walt, this film has simply failed in its mission.

The story of Travers' two-week visit to Disney's Los Angeles studios in 1961 is interwoven with flashbacks to her childhood, which will presumably show us how an imaginative young girl in Australia grew into a bitter British woman who corrects everyone's manners. In one especially well-wrought scene, the Sherman brothers (B.J. Novak and Jason Schwartzman) play the song "Fidelity Fiduciary Bank," and the lyrics are superposed on a drunken speech her alcoholic father (Colin Farrell) gives at a fair that utterly humiliates his family.

It doesn't take much knowledge of pop psychology to see that working on the script with Disney's well-meaning and chipper team is bringing back painful

memories of whatever hidden trauma dictates her now sour mood. The purse-lipped Travers serves as a foil to the jovial Disney, who confides in her his own difficult childhood. Both of them might be projecting their own fathers onto the character of Mr. Banks, the father in *Mary Poppins*, but only Disney has apparently risen above it all.

The focus on using art to sublimate painful experiences hides a darker side of the story in plain view. Disney breaks the first and most important promises he makes to her. Their major falling out revolves around the promise that he wouldn't use any animation. Her aversion to animation is never explained, and, given that it was Disney's forte, the audience is likely to forgive him for using it in what have become iconic scenes.

But what is not shown is how Julie Andrews' Mary Poppins is nothing like the

★★★★★

Saving Mr. Banks

Directed by John Lee Hancock

**Starring Emma Thompson,
Tom Hanks, and Colin
Farrell**

Rated PG-13

Now playing



COURTESY OF WALT DISNEY MOTION PICTURES

Walt Disney (Tom Hanks) and a disgruntled P. L. Travers (Emma Thompson), the author of the *Mary Poppins* books, in *Saving Mr. Banks*.

Mary Poppins in the book, which is a far greater betrayal from an artistic point of view and exactly what Travers asked him not to do. If you haven't read the books, Travers' father in his happy-go-lucky moments seems to be the inspiration for Mary Poppins as she is depicted in Disney's version. Yet, the actual inspiration for Mary Poppins eventually becomes clear, and the character's no-nonsense attitude is entirely lost with no comment in Andrews' cheerful singing and Van Dyke's buffoonery.

Despite the warm glow of its beautiful period sets, this film is almost vengeful. Anyone who loves Mary Poppins the Disney movie will necessarily feel defensive when Travers hates the songs and apparently everything fun. We're basically forced to side with Disney against her when she insists that the script preserve the spirit of the books, as if it were an unheard-of imposition.

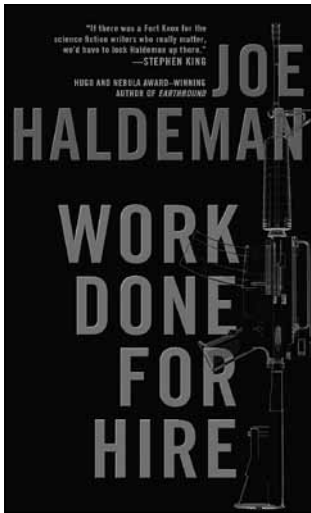
In fairness, PL Travers was actually a difficult person to like by some accounts, though it's hard to know what her side of the story is from this movie. In real life as in the movie, Travers insisted that her meetings with the script team be recorded, and one example conversation is played during the credits. It's as though the filmmakers are trying to justify their unflattering portrait by saying, "See? She really was like this!" Even her personal growth, which is credited to Disney's kind intervention, is undercut by her snippy comment to him at the premier.

Despite the occasional jabs at Disney's cloying brand of entertainment, the film couldn't just show Walt Disney as anything but down-to-earth and loveable, and so it set up PL Travers as a complete mess. I suspect she would have needed more than a spoonful of sugar for this one.

BOOK REVIEW

Science fiction war memoir in a surveillance state

It's more frightening when you don't even know if it's Big Brother watching you



COURTESY OF THE BERKLEY PUBLISHING GROUP

MIT Professor Joe Haldeman's new novel, *Work Done For Hire*.

By Kristen Sunter
STAFF WRITER

Joe Haldeman's latest book *Work Done For Hire* is a riveting near future science fiction story of the dangers of living in a surveillance state. Former sniper Jack Daley was drafted to fight in the continuing war abroad and has been coping with the trauma for nine years since returning home wounded. He has found some solace from his memories in writing, but no commercial success, and so he readily agrees to write the novelization of a horror movie that's in the works. It may be just work done for hire, but Hollywood's money will spend.

The horror story Jack writes follows a serial killer who hunts people and lives off of their meat. The descriptions of how he eviscerates his victims like deer are exceptionally

gory and detailed: do not read this book while eating. Hunter, as he is known to the authorities, targets isolated victims: a jogger along a mostly deserted path through the woods, a woman who's repairing a flat on her bike in the middle of nowhere. These clichés play off of our fears of being alone, far from the protection of the police, with no witnesses to run for help or clues left about what happened.

Then one day Jack awakens to find a sniper rifle on his doorstep and the first installment of a large payment he will receive if he kills a "bad man." He refuses to become an assassin, but the mysterious woman who calls to give him his orders also threatens his girlfriend Kit. The Enemy, as he calls them, seem to be able to trace his position and even see his gestures. Jack suspects they have access to credit card records,

phone calls and security cameras, but whether they are members of a governmental organization or have merely hijacked state technology remains to be discovered.

There is a tension between the isolation that horror movies teach us to fear, and the danger when the surveillance systems created to placate those fears are used against us. This book shows us the end results of citizens having no privacy coupled with a less than transparent government, where someone like Jack cannot even be sure the Department of Homeland Security agents he turns to are on his side. Jack seeks safety in the rural areas beyond the reach of technology, precisely where Hunter's victims were abducted. His world is not too difficult to imagine.

This book is written in an engaging first-person narrative, interspersed with the chapters of

Work Done For Hire

By Joe Haldeman

Ace Hardcover

January 2014

the book Jack sends to the Hollywood producer who hired him. Jack is a likeable fellow, if a little rough around the edges. The details about sniping, the realities of treating PTSD, and his conversations with other veterans he meets turn this book into the type of war memoir that has become more popular with increased awareness about PTSD: it is not just the war but also what happened afterwards when the soldiers came home that must be remembered.

INTERVIEW

Science fiction writer and MIT professor Joe Haldeman on his newest book

By Kristen Sunter
STAFF WRITER

Joe Haldeman is a well-known science fiction author and adjunct professor in CMS/writing at MIT. He recently spoke with The Tech about his latest novel, *Work Done For Hire*.

The Tech: I'd be tempted to classify *Work Done For Hire* as at least partly a war memoir, even though the war or the PTSD are only a backdrop. How did this story draw on your experiences as a vet or the experiences of people you know?

Joe Haldeman: A lot was from people I'd met long after my own war. It seems to me that the people who fought in the Gulf and are fighting in the desert now are much more susceptible to PTSD. I think it's partly the separation and partly the isolation from the culture that they're supposedly defending.

To me, PTSD is not an abreaction. It's a normal reaction for a normal human being if he has to kill people. You have to be pretty hard to do that for a living, and even tough guys are not that hard. Fictional people go ahead and kill when they have to and go on with business, but most actual people are a little more sensitive than that.

TT: I learned a lot about sniping from this book. Are those parts all true?

JH: I don't know! I read all the books. In fact, I have a sniper manual from the Civil War, and the way to get a good shot hasn't changed much, because there's wind between you and the target and it's all about nerve.

I'm a pretty good shot, but I don't shoot regularly. If I had to do what snipers do, I'd

have to start over. I don't think I could do it, because actually killing somebody with a rifle is such a weird thing. You squeeze the trigger, and you get the immediate physical reaction — the blow back in the shoulder — and then three seconds later some guy falls over a mile away. What is that about? I never had to do that because I was an engineer. Sometimes I'd set booby traps that could ultimately kill people, but I was never there when that happened.

TT: You have the horror story, where people are attacked when they're relatively isolated, and then you have the outer story, where somebody is trying to escape surveillance by isolating himself. One of the main themes seems to be the difference between what people fear and what they should fear.

JH: I'm not that methodical. What I had in mind, insofar as I can put it back together, was just a couple of scary situations with specific kinds of people. I didn't have a market in mind. I didn't have a publisher in mind. I just started writing. Then I had to put it away for a couple of years while I worked on another book.

I've written dozens of books, most of them science fiction, so this is a different kind of a book for me because I didn't consider it as science fiction. My original idea for the monster was that there was nothing supernatural about him. He was just a big, mean guy in a very dangerous situation, but then I thought, "I'm going to push the envelope and make him an unexplained monster."

TT: It's interesting that you started writing the book and then you put it away, because the parts about state surveillance are

very topical. It seems to be a warning tale.

JH: Well, I never think that way. You want to make the thing as scary as can be, and the more likely it is, the scarier it is. Some satellite of Neptune a couple hundred years from now doesn't have immediacy, but this guy in the woods could be there waiting for you right now.

I wanted a protagonist who was not scientific, and not even really very rational when it comes right down to it, but a likeable guy who's in a bad situation. I wanted his girlfriend to be a foil, so she's smarter than he is and actually more level headed, too. I had fun playing with that because he's not a hero, but he's thrust into a role that seems to ask for a hero, and he just does the best he can. I think he's a very honorable guy.

TT: When did you start writing the book?

JH: It was at least ten years ago. There are two different openings to the novel that I didn't use, and I might do novels of them some time.

TT: Is your writing process like that of your main character? He gets up early in the morning, he writes for a few hours, and he doesn't seem to go back and revise. He already has an outline because it's given to him, but then he decides to go off on his own.

JH: I've done that once, just writing for hire. It's easy because you just have to follow the story this other person thought of, and this other person in my case was a corporation, Paramount. That was the second Star Trek novel I did.

TT: On your website, you have a travelogue from 1996 when you actually biked a route that is pretty close what you describe

in the novel.

JH: It's very close. In fact, I used some of my notes from the trip in the novel. I was keeping very precise notes, and I was going to write a horror novel about a guy who was on this bicycle ride, but I decided to not chain the novel to that particular set of circumstances.

TT: What part of this book was the most fun to write? I hope you don't say the part about skinning people, because that was the hardest to read.

JH: No, that was the easiest to write. That's really just research. I've never even skinned an animal, unless you count bass.

The whole book was fun to write because it wasn't intellectually demanding the way a science fiction novel is. The most fun part was the monster, where he's demonstrating how inhuman he is, because he's the only science fiction or fantastic thing in the book, and that is my territory.

TT: What was the hardest to write?

JH: I guess the last third or so of the book, where all of the loose ends have to be brought together. It was a strange book for me because I wrote some of it in Europe, some in Japan, some here, and some down in Florida.

There's a contemplative aspect to writing a novel. It's a long book, and so the idea is being able to get back to that mindset that you had in Japan when you're on the other side of the world, and your character's sitting in a forest in some state that you haven't identified, and he's about to kill somebody. You have to put all these things together, and relate them to your own corpus, which is the novelist's game.

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612 out of 6,820 early action applicants admitted

The number of early action applicants increased 4 percent from the previous year

Early action, from Page 1

admitted students, while underrepresented minority students make up 26 percent. Thirteen percent would be the first in their families to attend college. Seventy-four percent of the admitted come from public high schools.

“Our Early Action admits hail from 49 states and 486 high schools,” wrote admissions officer Chris Peterson in a blog post on the MIT admissions website. “Though they all do different things — crafting and cartography, stargazing and sous vide, waltzing and welding — they are united by an academic record, a high caliber of character, and a strong match with MIT’s

mission to make the world a better place.”

According to an MIT press release, more than a third of the accepted group have won a national or international award.

This year marked the first time that MIT added the option of submitting a “Maker Portfolio” as a supplement to an application. Students could choose to showcase one project that was completed outside of a structured environment. Projects that were done as part of school, work, internships, or extracurricular activities were not eligible.

In an email to *The Tech*, Schmill explained that the admissions office wanted a way to standard-

ize the process by which students could document projects that they have undertaken.

‘Making is a great thing for students to do. It does not have to be part of a formal activity, and it can take many forms.’

—*Stu Schmill '86*
DEAN OF ADMISSIONS

“We received hundreds of [Maker Portfolio] submissions, which is probably on par with other years, although we have no way of counting previous years’ submissions,” noted Schmill. “There were two benefits to this new process: First, we were able to provide a scaffold that helped students create the

portfolios in ways that were meaningful for us to review. Second, the review process was streamlined, allowing us to be more efficient in reviewing the many responses we received.”


In addition, Schmill pointed out that merely including the option of submitting a Maker Portfolio brought “making” to the attention of many people.

“Making is a great thing for stu-

dents to do,” applauded Schmill. “It does not have to be part of a formal activity, and it can take many forms. We want to celebrate and encourage all of it.”


Although MIT has been increasing the size of the freshman class over the past couple of years, Schmill stated that this would no longer be the case for the Class of 2018.

“We have no plans to increase the size of the freshman class, and, in fact, as our yield has increased, we have been steadily decreasing the number of students we have admitted,” said Schmill. “We are fortunate to have such a strong applicant pool overall, and the challenge is to be able to only select such a small number from that large group.”



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Ad Council U.S. Department of Transportation

MIT Ludwig Center gifted \$90 million to study metastasis

\$540 million total given to the six Ludwig Centers

Ludwig, from Page 1

aim for a bigger impact than normal grant cycles might allow,” said George D. Demetri, professor of medicine at Harvard Medical School and Quick Family Chair of Medical Oncology at the Dana-Farber Cancer Institute.

Federal funding, for example from the National Institutes of Health, funds specific projects based on the “ability to write convincing research proposals,” said Weinberg. With its gift, however, “the Ludwig has invested in the track records of those who are participating with the assurance that there will be productivity in the

future.”

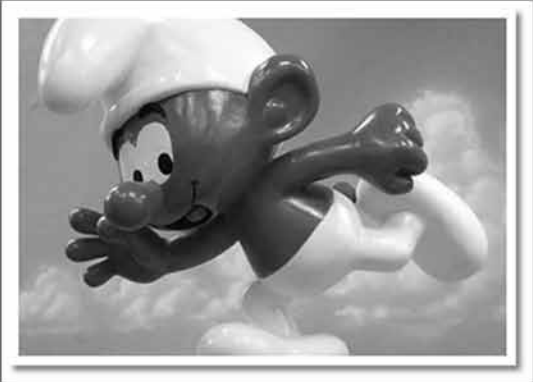
MIT’s portion of the gift will go towards research on metastasis. “Metastasis is responsible for 90 percent of cancer-related deaths, yet we still understand little about how it begins. These funds should change that,” said Robert Weinberg, director of MIT’s Ludwig Center. “Our hope is that our research will translate into new methods to better diagnose cancer and provide better prognostic tools,” said Jacks. According to McDermott, the Ludwig Centers at Harvard, Johns Hopkins, UChicago, Sloan-Kettering, and Stanford have respectively focused on cancer therapy resistance, prevention and early

detection, metastasis and hormone/radiation-based treatments, immunology and immunotherapy, and stem cells.

According to Tyler Jacks, a Ludwig Scholar and director of the Koch Institute, MIT will be able to “add new investigators to our team” with the gift, from biologists to engineers. The gift will also be supplemental funding to projects that do have other, but “inadequate,” sources of funding. Because the sum is “directed at a small group,” said Jacks, it is a significant amount, accounting for “at least 50 percent if not more of research dollars directed towards metastasis [at MIT].”

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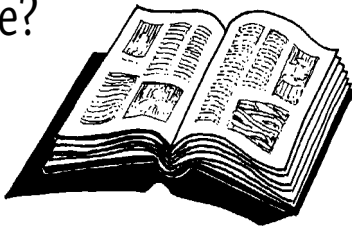
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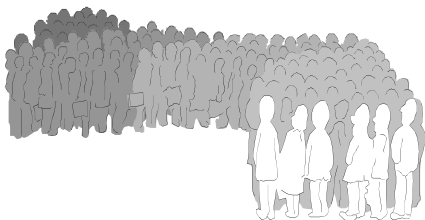
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Champion of diversity and openness remembered

Science advocate welcomed minorities, saw OCW’s rise and endowment’s quadrupling

Charles Vest, from Page 1

expansion of knowledge, MIT’s research enterprise grew substantially during his tenure. Vest spearheaded expansions into fields including brain and cognitive sciences (with the establishment of the McGovern Institute for Brain Research and the Picower Center for Learning and Memory); nanotechnology (with the creation of the Institute for Soldier Nanotechnologies); genomic medicine (with the founding of the Broad Institute); biological engineering; engineering systems; and new media, among others.

“Personally and professionally, Chuck Vest set an exceptional standard of intellectual clarity, moral courage, and generosity of spirit,” MIT President L. Rafael Reif says. “And there was no better example of his vision and values than the creation of MIT OpenCourseWare — the simple, elegant, unprecedented idea that MIT should make all of its course materials available online to anyone in the world, free. Thanks to Chuck’s leadership, OCW has become a source of outstanding content for 150 million global learners, the model for the global OpenCourseWare movement, and the foundation and inspiration for everything we are striving to achieve with edX and MITx.”

‘I have always believed that contemporary gender discrimination within universities is part reality and part perception, but I now understand that reality is by far the greater part of the balance.’

—Charles M. Vest
MIT’S 15TH PRESIDENT

In 1999, Vest charged a faculty committee with considering how to use the Internet in pursuit of MIT’s mission. That committee, led by Professor Dick K. P. Yue, made a revolutionary proposal: the online publication of teaching materials for MIT courses, free and available to learners worldwide. By November 2007, OpenCourseWare had completed the initial publication of virtually the entire curriculum, more than 1,800 courses in 33 academic disciplines. MIT’s move would catalyze similarly bold efforts by universities around the world to democratize access to education.

“Chuck Vest was a staunch supporter and champion of MIT OpenCourseWare literally from day one. OCW would not have been possible without his singular vision, courage, and leadership,” says Yue, the Philip J. Solondz Professor of Engineering and Professor of Mechanical and Ocean Engineering.

Vest fostered MIT’s international engagement through large-scale ventures, often undertaken in conjunction with other institutions. These included the birth of the Singapore-MIT Alliance, intended to promote global engineering education and research using synchronous distance-teaching technologies.

Closer to home, Vest undertook a major examination of student life and learning. His tenure as presi-

dent was defined by campus innovations such as the introduction of cellular and molecular biology as a core requirement for all undergraduates; the establishment of the MacVicar Faculty Fellows Program to recognize and reward excellence in teaching; the creation of a five-year combined Bachelor/Master of Engineering program; a restructured housing policy including a common first-year experience; and the construction of three new student residences, all designed to enhance interaction among students and faculty, and a state-of-the-art sports and fitness center.

Vest’s strong belief that MIT could best address certain educational and research challenges in partnership with others took the form of collaborations with industry that he helped foster. “Industrial issues have become intellectually challenging and exciting ... and we need each other as never before,” he wrote in 1993.

A scientist on the national stage

On assuming the MIT presidency — an occasion he later described as “a call to national service” — Vest set out to rebuild public understanding of and support for higher education and research. He became a regular pres-

ence in Washington, championing research, science, and innovative partnerships among universities, government, and industry. Vest logged more than 100 visits to the nation’s capital, personally conferring with some 250 federal officials during his time as MIT’s president.

“Chuck came to lead MIT at a difficult time for American higher education,” says Paul Gray, who preceded Vest as MIT’s president. “In 1990, many in Washington had come to feel that the nation’s universities had not acted as wise stewards of their federal funding. He made frequent trips to Washington as an ambassador not only for MIT, but indeed, for academia as a whole — and he did so supremely well.”

Vest served on the President’s Council of Advisors on Science and Technology and chaired the Task Force on the Future of Science Programs at the Department of Energy. At the request of President Bill Clinton, he chaired the Committee on the Redesign of the International Space Station, which revitalized the space station at a time when its future was in question.

“Chuck Vest’s irrepressible good humor and easy laughter mixed effortlessly with his earnest, persistent pursuit of the right path in all things,” says Susan Hockfield, who succeeded Vest as MIT’s president. “He took up with passion the role of MIT’s president as

national spokesperson for higher education and research policy. MIT affords an especially clear view of the dependence of the American innovation economy on federal investments in education and research, and President Vest expanded the Institute’s engagement in federal policymaking, becoming a consistent, trusted voice of the research university in Washington, earning the gratitude of college and university presidents across the nation. Later, as president of the National Academy of Engineering, he continued his role as advocate-in-chief of sound policies for education and research. At MIT and beyond, he will be terribly missed, because his advocacy success was inseparable from his personal warmth.”

“Chuck Vest was, above all, an extraordinary human being: Not only was he perhaps the most respected figure in higher education, he was a man of extraordinary decency, integrity, and grace,” says Lawrence S. Bacow, who served as MIT’s chancellor under Vest before being named president of Tufts University in 2001. “His principled courage stood him, and MIT, in good stead on countless occasions when the going got tough, and he was a good friend and extraordinary mentor to so many of us. I will miss him terribly.”

After the terrorist attacks of Sept. 11, 2001, Vest became a national spokesperson on the importance of higher education and research to the nation’s well-being. As research universities grappled with the balance between security and openness, Vest argued directly, and passionately, in favor of the latter. “Knowledge creation thrives in openness and suffers in isolation,” he wrote in 2002.

In 2004, Vest was appointed by President George W. Bush to serve on the bipartisan Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction. The commission ultimately concluded that in reporting the presence of nuclear, chemical, and biological weapons of mass destruction prior to the U.S. invasion of Iraq in 2003, U.S. intelligence agencies were “dead wrong” and their collected information “worthless or misleading.”

A champion of diversity

Vest’s deft handling of one of his presidency’s greatest challenges — a public examination of MIT’s troubled history on issues relating to gender equity — ultimately proved a high point of his tenure, reinforcing the Institute’s status as a beacon of meritocracy.

In 1998, Vest forthrightly acknowledged serious gender-equity problems cited by senior women faculty in the School of Science; he then supported corrective measures to address longstanding imbalances. A stunningly candid and publicly released report detailing gender inequity at MIT — and Vest’s subsequent leadership on the issue — stimulated examination of gender equality at universities across the country.

“I have always believed that contemporary gender discrimination within universities is part

reality and part perception,” Vest wrote in a much-cited preface to the MIT report on gender equity, “but I now understand that reality is by far the greater part of the balance.”

Vest’s leadership team, and those of MIT’s five schools, reflected Vest’s personal commitment to diversity and inclusion. Under Vest, MIT appointed its first female department head in the School of Science; its first two minority department heads in the School of Engineering; its first five female vice presidents; and the first African-American chancellor.

Throughout his presidency, Vest also strived to bolster the diversity of MIT’s student body and

‘Chuck Vest’s irrepressible good humor and easy laughter mixed effortlessly with his earnest, persistent pursuit of the right path in all things.’

—Susan Hockfield
MIT’S 16TH PRESIDENT

its faculty. Underrepresented minorities grew from 14 percent to 20 percent of the undergraduate population, and from 3 percent to 5 percent of the graduate student body. The number of women grew from 34 percent to 42 percent of undergraduates; when Vest stepped down as president, women outnumbered men in 10 undergraduate majors. The proportion of women graduate students increased from 20 percent to 29 percent during his tenure.

Vest was a staunch advocate of need-based financial aid. In 1992, MIT went to trial to fight the Justice Department’s contention that antitrust statutes were violated when top universities, including MIT, shared information about applicants’ financial need. A lengthy court battle ultimately established the “MIT Standards of Conduct,” enabling colleges committed to need-based aid to exchange certain data, and also led to legislation permitting colleges to adopt a common methodology for measuring need.

A campus reimaged

Vest’s presidency reinvigorated MIT’s campus, bringing new construction whose square footage exceeded the scope of MIT’s original 1916 campus in Cambridge. Indeed, as Vest left office, one-quarter of the Institute’s square footage had been constructed during his term. His tenure also produced some of MIT’s most celebrated buildings: Vest championed engagement with world-class architects to design facilities such as the Ray and Maria Stata Center; Simmons Hall, an undergraduate residence; the Albert and Barrie Zesiger Sports and Fitness Center; Building 46, which houses the McGovern Institute for Brain Research and the Picower Institute for Learning and Memory; and the Media Arts and Sciences building.

“I believe that the buildings at this extraordinary university should be as diverse, forward-thinking and audacious as the community they serve,” Vest said. “They should stand as a metaphor

for the ingenuity at work inside them.”

Beyond the construction of new facilities along Vassar Street, MIT’s revitalization of Vassar Street itself — with new trees, lighting, bicycle lanes, and paving — breathed new life into what had for decades been a grim and rundown area of Cambridge.

A career immersed in engineering

Charles Marsteller Vest was born Sept. 9, 1941, in Morgantown, W.Va.; 49 years later, in his inaugural address at MIT, he recalled his upbringing in “a warm family in a small town in West Virginia.” Vest earned a BS in mechanical engi-

neering from West Virginia University in 1963, and MS and PhD degrees in mechanical engineering from the University of Michigan in 1964 and 1967, respectively.

Vest joined the Michigan faculty as an assistant professor in 1968, teaching courses on heat transfer, thermodynamics, and fluid mechanics, and conducting research in heat transfer and engineering applications of laser optics and holography. He and his students developed techniques for making quantitative measurements of various properties and motions from holographic interferograms, especially the measurement of three-dimensional temperature and density fields using computer tomography. He became an associate professor at Michigan in 1972 and a full professor in 1977.

In 1981 Vest’s career turned toward academic administration when he became Michigan’s associate dean of engineering. He was named dean of engineering in 1986, and served as Michigan’s provost and vice president for academic affairs from 1989 until he became MIT’s president on Oct. 15, 1990.

“Serving as president of a major research university is not a sandbox ambition for any child — I remain frankly astonished at the road that led me here,” Vest wrote upon stepping down as president in 2004. “But looking back at that road — the bends and dips, the forks and unintended shortcuts — I’m struck by how little one can predict at the journey’s outset and by how much of life comes down to how one handles the points where the roads cross. I am also overwhelmed with the sense of how much I owe to the insight, imagination, inspiration and judgment of the many, many gifted people I have been lucky enough to work with at MIT.”

Vest is survived by his wife, Rebecca; daughter and son-in-law, Kemper Vest Gay and John Gay; son and daughter-in-law, John and Christina Vest; and grandchildren Mary and Robert Gay and Ameri and Charles Vest.

Solution to Crossword I

from page 5

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

Solution to Crossword II

from page 6

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

Solution to Sudoku

from page 7

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

Solution to Techdoku I

from page 7

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

Solution to Techdoku II

from page 7

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

Hazel Sive steps down as associate dean of science

Worked on educational initiatives, postdoc community, mentoring of junior faculty

Sive, from Page 1

two-fold,” said Sive. “I wanted to be accessible, and I wanted to be innovative.” To that end, she “met with hundreds of students, postdocs, and faculty who needed some input outside of their departmental unit.”

“One of the student projects I liked best was to answer the question, ‘Which life sciences major should I go into?’” said Sive. “There wasn’t any organized material, so we put together a useful new website including all life sciences-based

majors and graduate programs, *life-sciences.mit.edu*.”

annual review system for our postdocs, both in the School of Science

Sive organized a program that allowed junior faculty to learn about aspects of becoming part of the MIT faculty.

Sive also worked to improve the postdoctoral researcher community, co-chairing the faculty advisory committee to the Postdoctoral Association founded in 2011. “I’m very pleased that we implemented an

and throughout the Institute,” said Sive. Every other group at MIT had a feedback system: “The undergraduates get grades, graduate students have thesis committees, and faculty have annual reviews. Postdocs had

nothing.”

Instrumental in compiling the 2011 “Report on the Status of Women Faculty in the Schools of Science and Engineering” that shed light on a need to improve junior faculty mentoring, Sive found the junior faculty at MIT to be of “great interest.” In addition to overseeing faculty searches, she organized a program that allowed junior faculty to learn about teaching students, mentoring, writing recommendations, and other aspects of becoming part of the MIT faculty. Just as

there is adjustment time for students, “it requires some time for a junior faculty member to come here and become part of the Institute,” she said.

Sive’s successor is yet to be determined, as the associate dean is appointed by the dean of the School of Science. Currently, the mathematics department’s Michael Sipser is serving as the interim dean, following the nomination of his predecessor Marc A. Kastner to lead the U.S. Department of Energy’s Office of Science.



OMARI STEPHENS—THE TECH

The Institute closed on Friday, Jan. 3 in response to a snowstorm that blanketed the northeast with large amounts of snow. Here, a snow-shoveling crew takes a break in Lobby 7 on Friday afternoon. Ismael Imul, one of the members of the crew, said that they started clearing snow from walkways around 5:00 a.m., and they had stopped around 2:30 p.m. because the snow had stopped falling. He said they were expecting to start again in the evening if the snow returned.

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INNOVATION NATION

Without Your Permission

Alexis Ohanian visits MIT

By Victoria Young
STAFF WRITER

In the place of the usual formulas and diagrams, a small alien, chipmunk in a scarf, and pig with bread wings had appeared on the chalkboard. Yes, Alexis Ohanian, the “startup guy” of reddit, hipmunk, and breadpig fame had taken over E51-345 on a Saturday night during finals week at MIT to inspire the beavers to embark on a mission of making the world suck less. Within a couple of years of graduating from the University of Virginia, Ohanian sold reddit for millions and has since gone on to start many other companies, such as hipmunk and breadpig, all while representing the seed accelerator Y Combinator and investing in over sixty other tech startups. A lover and defender of the Internet, Ohanian

is launching his book, *Without Your Permission*, to evangelize entrepreneurs to use the Internet, which he describes as arguably “the most powerful and democratic tool for disseminating information in human history” to make awesome things that change the world. (A photo of a breadpig on a flat globe popped up on the slideshow.) Ohanian candidly discussed the challenges that entrepreneurs face in working on a product, facing competitors, and pitching to investors, showing photos of the early days in his startup life, proclaiming: “If you can build — you can solve problems.” At MIT, a school full of builders and inventors, solving problems is embedded deeply in our culture, and Ohanian was here to inspire the beavers to leverage the power of the Internet to “create new communities, technologies, businesses or charities.” More

importantly, he continued to break down the notion that successful entrepreneurs are special or know exactly what they are doing. In fact, he states, it’s the exact opposite: “Don’t let not knowing what you’re doing stop you. People who look like they have it together are still hacking it. Don’t be afraid to suck.” What about the critics? Ignore them. Ohanian shared an early story of a harsh critic telling him reddit would never amount to anything, a statement which he promptly taped up on the wall next to his bed as a motivating reminder to wake up to every morning: “Haters gonna hate. Eat ‘em for breakfast like waffles ... delicious waffles.” Next, Ohanian brought in Grouper founder Tom Brown, a Course 6 MIT alumnus, to discuss his experience founding a startup in a Small Empires-like fireside

chat. Brown reflected on his experience at MIT, telling students to relish in the unique environment: “At MIT you’re with like-minded people. Excitement breeds more excitement.” He also talked about the panicked moments as a startup founder trying to update the code of his site prototype in time for demos during a power outage in Silicon Valley and getting selected for Y Combinator. Brown left us with one resounding piece of advice: “Do not be afraid to take risks and fail.” The event, filled with inspiring stories and hilarious moments, culminated in T-shirts being shot out of a T-shirt cannon before Ohanian met with MIT students at a book signing of *Without Your Permission*. In it, he shares his ideas, tips, and even his own doodles about harnessing the power of the web for good.

THE SECRET LIVES OF RESEARCHERS

I am a meerkat

Navigating the landscape of knowledge

By Emily Moberg
STAFF WRITER

As a scientist, I like to imagine myself as a meerkat. Not in the “I’ll eviscerate my grandkids someday” sense, but in the “I both dig deep holes and survey the land at the same time” sense. Let me explain. My favorite description of great scientists is from the book *The Great Influenza: The Story of the Deadliest Pandemic in History*. The author John Barry says the great scientists are able to delve deeply into a very specific question, but also able to see how their inquiry fits into the greater landscape and choose wisely where to delve next. I envisioned this as meerkats digging into specific questions in a wide savannah of potential knowledge. This imagery stuck and I decided I want very much to be a digging and lookout meerkat in the world of scientists, digging holes deeper and deeper in search of more knowledge, and popping my little head up to see how my little tunnel fits into the big picture. I have found developing both skills to be a continual journey and I wanted to share how I have tried to bridge these two opposing directions of inquiry and thought. I felt my undergraduate education prepared me really well to talk across the broad landscape of potential knowl-

edge. As an undergraduate, walking up the stairs of 77 Mass Ave with my Dunkin Donuts coffee, I felt as if the whole intellectual world was open to me. Turn right, I could study marine robots or learn how to make bridges. Turn left and I could study urban planning and make smarter cities. Go straight and I could make photo-synthetic nanomaterials or revolutionize modern physics. Keep going straight and I could learn how to make theatre sets. Straight, then left, I could study artificial intelligence or networks of robots. Right from there and I could study the earth and atmosphere. Heck, I could take classes on modern French theatre and physics-for-masochists in the same year! I was exploring and expanding, trying to stuff as much knowledge and opportunity into my brain as I possibly could. I was such a good lookout meerkat. Then I came to graduate school, which is all about the deep digging. To even apply, I had to define what seemed like a tiny area — theoretical ecology. The next year, I decided I wanted to focus on bioeconomics, then the bioeconomics of fisheries, until I finally staked out the tiny niche that will be my academic territory for the next five years (the bioeconomics of fisheries responding to climate change, in case you’re curious!). Within that niche, I proposed a series of three questions to an-

swer — those are my little holes to dig. In those questions, I’ve been digging deeply and happily entrenching myself. I read the papers that came before me, cherry-picking the knowledge of the giants of yore to understand the landscape right around me. I found this process exhilarating and fascinating — until I, metaphorically, looked up. Above me was a tall tunnel I had dug myself into and above that was the whole of academic knowledge and possibility. I felt trapped and claustrophobic, as if I had unknowingly cut myself off from the possibilities of the world and truncated my future learning. How, if I dig even deeper, am I ever going to poke my head out to start a new hole or even figure out where my little research hole is? I’m still training to balance my meerkat skills, but I have found a few helpful training tips so far: 1. Think about the broader impacts of your research. Honestly acknowledging both why it’s novel and what areas it does not tackle has been a great way for me to get my head above air. Plus, it’s required by most funding agencies. 2. Read other journals during lunch time. My lab, libraries, and even the internet have lots of interesting papers that range from closely related to not at all related to my research. Skimming these during lunch is a great way to find out what

the cutting edge research in other fields is. In fact, a tangential article I read last year helped me decide that studying fisheries responding to climate change was the niche I wanted to fill for my thesis topic. Plus, reading about implanted memories in mice or how ants can move as a fluid is always fun. 3. Read the news. Knowing the issues that are being thought about politically gives me a much better context for my work. For example, world news articles about political instability or refugees often mention food stability, which may not directly relate to my research question, but gives me a better idea of how my research about a potential food supply (fish) fits into the ‘real world.’ 4. Do something totally different. I dance during the week, which lets my brain think about something entirely separate from my research. Forcing myself out of my little research hole and then going back into it often gives me the perspective I need to tackle something in a new way or to question the method I’m using. Hot showers, interestingly, work similarly. I’m sure this list is incomplete and I look forward to developing my ability to see depth and breadth of my field over time. In the meantime, there is a lion coming and I need to pop back in my meerkat hole!



UPCOMING HOME EVENTS

Wednesday, January 8

Men's basketball vs. Clark University

7 p.m. Rockwell Cage

Saturday, January 11

Swimming and diving vs. Coast Guard Academy

2:30 p.m. Zesiger Center Pool

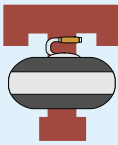
SPORTS SHORT

MIT curling team rocks RPI tournament

The MIT curling club team swept their way to victory in their second tournament of the season, hosted by Rensselaer Polytechnic Institute at the Schenectady, NY curling club on Dec. 7 and 8. The team, consisting of skip Phillip Nadeau G, vice Andrea Dubin G, and second Greg Dooley

G, defeated Colgate University in the finals with a decisive 9-0 win, and gained 10 points towards qualifying for the National Championships in Blaine, MN in March 2014. MIT is currently undefeated this season, with an 8-0 overall win-loss record. The MIT curling club practices weekly at the Broomstones Curling Club and is always looking for new members.

—Phillip Nadeau



Women's basketball falls
Wellesley defeated MIT 54-42 on Saturday

By Mindy Brauer
DAPER STAFF

Host Wellesley College capitalized on a 15-of-21 performance at the free throw line along with 26 points off turnovers as it defeated MIT, 54-42, in a NEWMAC women's basketball game on Saturday. Sabrina M. Drammis '16 led the Engineers (5-5, 2-3 NEWMAC) with a game-high 16 points as Mari R. Kordell '15 tallied 11 points and five assists.

A layup by Michelle Battipaglia '15 sparked a 10-3 run that was capped by a Drammis layup.

Durva N. Bhandare '16 posted seven points and six rebounds while Rachel A. Hunt '14 recorded eight boards and five blocks. Maya K. Ramachandran '16 bolstered MIT's efforts with eight rebounds and two blocks.

The Engineers jumped out to a 7-2 lead only to see the Blue go ahead, 10-7, after 5:45 elapsed. Baskets by Kordell and Drammis put MIT in front; however, after a pair of lead changes, Wellesley generated seven straight points to go up 19-13 with 4:20 left in the half. A layup by Michelle Battipaglia '15 sparked a 10-3 run that was capped by a Drammis layup which gave the Engineers a 23-22 edge with 22 seconds on the clock. The Blue replied with a layup of its own to enter the intermission with the slim lead.

Wellesley carried the momentum into the second stanza as it mounted a 16-5 run to claim a 40-28 advantage at the 11:35 mark. Bhandare buried a three-pointer and then added a pair of free throws in fueling an eight-point spurt that brought MIT within four (40-36) with 7:04 remaining. The Blue responded with a 12-2 run during the next four minutes to establish its largest margin of the day at 14 (52-38). The Engineers quickly countered with baskets by Bhandare and Drammis but they could not overcome the 10-point deficit during the final two minutes of regulation.



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